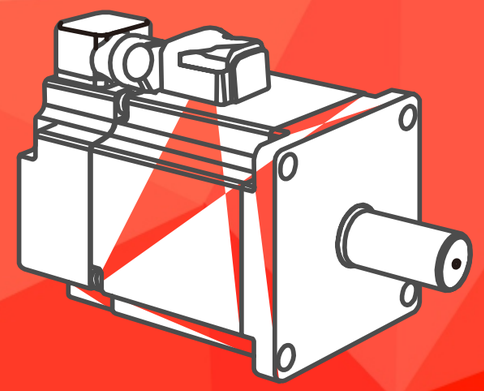


TIGER

深圳市泰格运控科技有限公司

选型手册 PRODUCT MANUALS

Shenzhen Tiger Motion Control Technology Co., Ltd.

泰格运控选型手册

Naming rules for motor type
电机类型号命名规则

TGSM 060 R40 A 30 M 1 H F B Q E H

TG — Tiger
SM — Synchronous motor

XXX Power
R40 400W
R75 750W
1R5 1.5KW
011 11KW
100 100KW
— KW

XXX base model
040 40
060 60
080 80
110 110
130 130
140 140
180 180
240 240
250 250
260 260

x voltage
A 24V
B 36V
C 48V
D 60V
E 80V
F 110V
G 220V
H 300V
I 380V
J 500V
K 600V
L 900V

XX Rotating speed
** × 100 (rpm)
15 1500
30 3000
60 6000
90 9000
A-J 表示 (0-9) × 1000rpm
1A 10000
1B 11000
1J 19000
2A 20000
2B 21000

X Attachment
N Shaft+key
O Oil seal+key
1 Brake+key
2 Oil seal+brake+key
3 Oil seal+smooth key
4 Brake+smooth key
6 Smooth key
7 Milling flat shaft
8 Oil seal+flat

X. Encoder type
N. No encoder
A. 22 bit single turn SSI absolute encoder
B. 23 bit multi turn SSI absolute encoder
C.1024 incremental encoder
D. 17 bit multi turn SSI absolute encoder
E.4096 incremental encoder
F.23 bit multi turn BSSI absolute encoder
G.17 bit multi turn BSSI absolute encoder
H.Hall induction
J.17 bit single turn absolute encoder
M.2500 incremental encoder
R.5000 incremental encoder
S.2500 saving line encoder
T.23 bit single turn absolute encoder
U.23 bit multi turn absolute encoder
X. Rotary encoder
Y.22 bit turn turn BISS absolute encoder

X Internal mark

X Shell colour
S Silver
B Black

X Shell tyep
F Seperating
Z Whole

X Rotor inertia
L Low
M Middle
H High

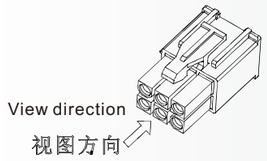
Maximum rotational speed
L Lower than standard motor
H Higher than standard motor
Standard motor doesn't show here

X Pair of poles
A 1 pair of poles
B 2 pair of poles
C 3 pair of poles
D 4 pair of poles
C 3 pair of poles
D 4 pair of poles
E 5 pair of poles
F 6 pair of poles
G7 pair of poles
H 8 pair of poles
Letters are sequentially extended by number of digits

Servo motor wiring definition

Motor power line





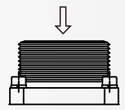


	MOLEX 50361672 插					
PIN No.	1	2	4	5	3	6
definition	U	V	W	PE	Br	Br
Colour	red	blue	black	yellow&green	brown	white

: MOLEX-39000059 Definition of low-voltage motor wiring

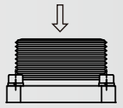
FG	U	V	W	Br+	Br−	





	YD28J4Z/YD32J4Z			
	1	2	3	4
	FG	U	V	W





	YD28J7Z						
1	2	3	4	5	6	7	
FG	U	V	W	Br+	Br-	NC	

Note: The power loss holding brake cannot be used for braking

Motor encoder cable

Incremental encoder wiring

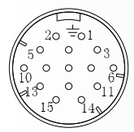
	AMP-TE/15P/172171-1														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
5V	0V	B+	Z-	U+	Z+	U-	A+	V+	W+	V-	A-	B-	W-	FG

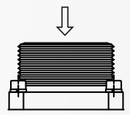




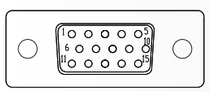
Absolute value encoder wiring

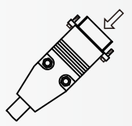
socket model	plug: AMP-TE/9 male/172169-1 pin : AMP-TE/ female /170361-1								
No.:	1	2	3	4	5	6	7	8	9
definition	VB+	NC	SD+	VB-	NC	SD-	FG	0V	+5V
colour	brown		blue	white		yellow	shielding wire	black	red





	YD28J15Z														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FG	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-
FG	5V	0V	A+	B+	Z+	A-	B-	Z-						
FG	5V	0V							SD+		VB+	SD-		VB-





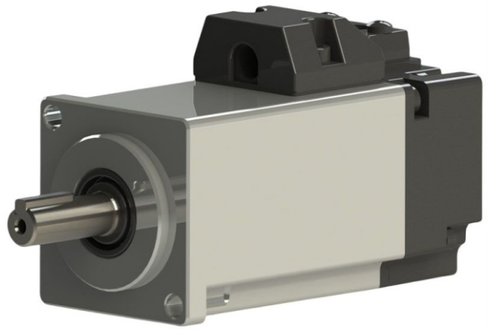
Incremental encoder wiring

	DB15														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0V	5V	W+	V+	U+	Z+	B+	A+	NC	W-	V-	U-	Z-	B-	A-	FG

注：接线端子及定义仅供参考，实际产品以对应规格书为准。
Note: Terminals and definitions are for reference only.
The actual products are subject to the corresponding specifications.

SM040

SERVO MOTORS



基本指标
Basic indicators

Ambient temperature:0~+40℃
Rated time:continous
Ambient humidity:20~80%
Excitation method: Permanent magnet type
Vibration level:V15
Mounted method: flange
Anti-Vibration Performance : vibration acceleration 24.5m/s(2.5G)
Connection method: Direct connection
Insulation resistance:DC500V,100MΩ
Rotation method: Clockwise rotation when viewed from the load side under forward rotation command
Insulation voltage:AC1500V 1minute
Protection method: Self cooling,IP54,IP65
thermal level:F

特性
Characteristic

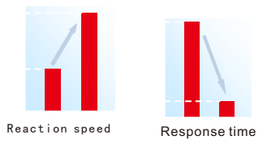
Strong overload capacity

Adopting high magnetic energy resistant rare earth magnetic steel
Less heat generating

F level anti-heat resistance insulation



quick response



More compact

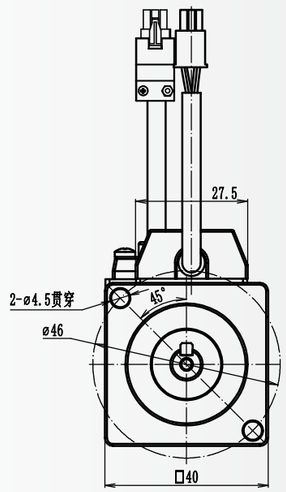


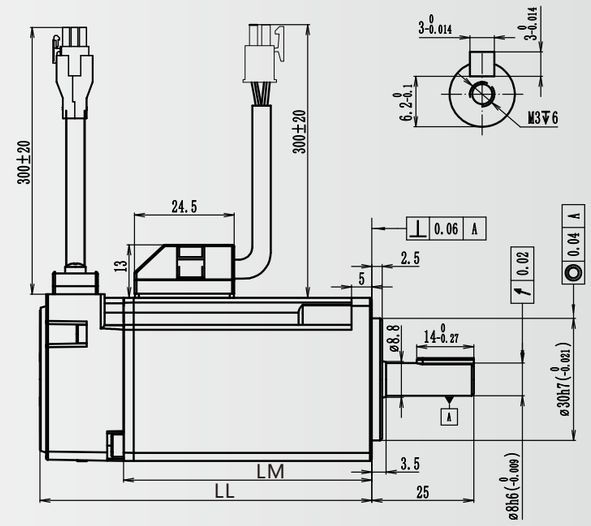
基本参数
Basic Parameters

伺服电机型号 Motor model		R05x30xxLZSxE		R10x30xxLZSxE	
额定输出功率 Rated power	W	50		100	
电压 Voltage	V	48	220	48	220
额定转矩 Rated torque	N.m	0.16	0.16	0.32	0.32
瞬间最大转矩 Instantaneous maximum torque	N.m	0.48	0.48	0.96	1.22
额定电流 Rated Current	A	2.2	1.22	3.76	1.22
瞬间最大电流 Instantaneous maximum current	A	6.6	3.7	11.03	4.3
额定转速 Rated speed	rpm	3000	3000	3000	3000
最高转速 Maximum speed	rpm	3600	6500	3600	6500
极数 Number of poles	Poles)	10			
Torque coefficient	N.m/A	0.077	0.1388	0.089	0.276
线反电势系数 Line back EMF coefficient	mV/rpm	4.65	8.39	5.4	16.7
线电感 Linear inductance	mH	2.03	7.5	1.4	13.3
线电阻 Line resistance	Ω	2.7	8.4	1.49	12.4
转子转动惯量 Rotor moment of inertia	$kg.m^2.10^{-4}$	0.0283(0.0405)		0.0486(0.0519)	
制动器额定电压 Brake rate voltage	V	24V±2.4V			
制动器额定功率 Brake rate power	W	4.4			
制动器保持转矩 Brake torque	N.m	≥0.32			
编码器 Encoder	标准(standard)	17 bit single turn magnetic encoder			
	选项 (option)	17 bit multi turn absolute magnetic encoder、23bit multi turn photoelectric encoder、2500incremental encoder etc			
重量 Weight	Kg	0.31(0.58)		0.48(0.75)	

注：括号内数据为加刹车后电机相关参数。
Note: The data in bracket is the relevant parameters of motor after braking.

外形图
Outside View





单位/unit：mm

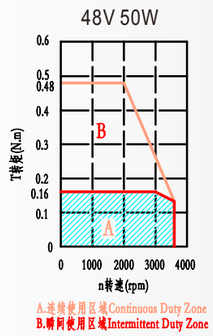
尺寸
Dimensions

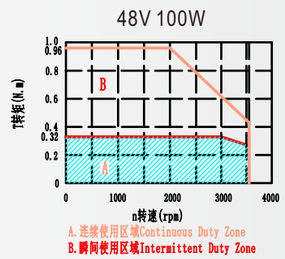
040	R05x30xxLZSxE	R10x30xxLZSxE
LM	41(67)	61(87)
LL	61.5(87.5)	81.5(107.5)

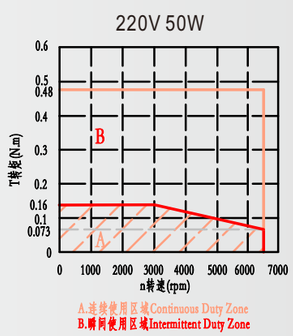
注：1、括号内数据为加刹车后电机相关数值。

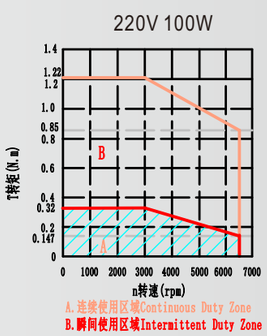
Note: 1.The data in bracket is the relevant parameters of motor after braking.

转矩-转速特性
Torque-Speed Characteristics









SM060

SERVO MOTORS



基本指标
Basic indicators

Ambient temperature:0~+40℃
Rated time: continous
Ambient humidity:20~80%
Excitation method: Permanent magnet type
Vibration level:V15
Mounted method:flange
Anti-vibration performance:vibration acceleration 24.5m/s(2.5G)
Connection method: Direct connection
Insulation resistance:DC500V,100MG
Rotation method:Clockwise rotation when viewed from the load side under forward rotation command
Insulation voltage:AC1500V 1miunte
Protection method: self cooling,IP54,IP65
Thermal level:F

特性
Characteristic

Strong overload capacity

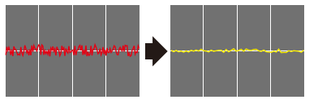
Adopting high magnetic
Energy resistant rare
Earth magnetic steel

F level anti-heat resistance insulation

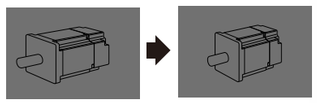
Low positioning torque



Low torque pulsation



More compact

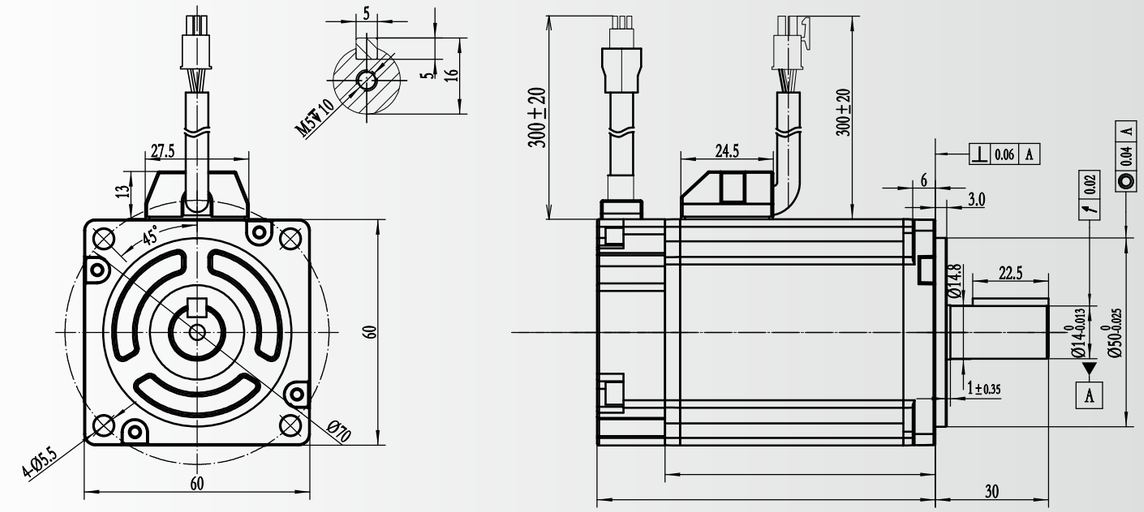


基本参数
Basic Parameters

伺服电机型号 Motor model		R20x30xxHFBxE		R40x30xxHFBxE		R60x30xxHFBxE	
额定输出功率 Rated power	W	200		400		600	
电压 Voltage	V	48	220	48	220	220	380
额定转矩 Rated torque	N.m	0.64		1.27	1.27	1.91	1.91
瞬间最大转矩 Instantaneous maximum torque	N.m	1.92	2.23	3.81	4.46	6.7	6.7
额定电流 Rated Current	A	5.36	1.62	9.2	2.1	4.1	2.1
瞬间最大电流 Instantaneous maximum current	A	16.05	5.7	27.85	7.5	14.8	7.6
额定转速 Rated speed	rpm	3000	3000	3000	3000	3000	3000
最高转速 Maximum speed	rpm	3600	6500	3600	5000	6000	6000
极数 Number of poles	Poles)	10					
Torque coefficient	N.m/A	0.125	0.417	0.145	0.635	0.509	0.947
线反电势系数 Line back EMF coefficient	mV/rpm	7.56	25.2	8.74	38.4	30.8	52.27
线电感 Linear inductance	mH	1.06	12.2	0.71	13.3	5.9	18.8
线电阻 Line resistance	Ω	0.667	6.3	0.325	6.1	2.6	8.16
转子转动惯量 Rotor moment of inertia	$kg.m^2.10^{-4}$	0.3(0.331)		0.56(0.587)		0.82(0.847)	
制动器额定电压 Brake rate voltage	V	24V±2.4V					
制动器额定功率 Brake rate power	W	7.6					
制动器保持转矩 Brake torque	N.m	≥1.5					
编码器 Encoder	标准(standard)	17 bit single turn magnetic encoder					
	选项 (option)	17bit multi turn absolute magnetic encoder、23 bit multi turn photoelectric encoder、2500 incremental encoder etc					
重量 Weight	Kg	0.8(1.3)		1.2(1.6)		1.6(2)	

注：括号内数据为加刹车后电机相关参数。
Note: The data in bracket is the relevant parameters of motor after braking.

外形图
Outside View



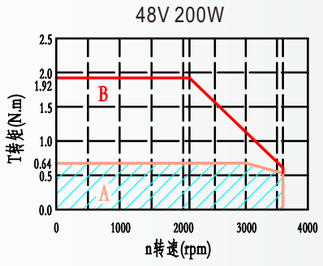
尺寸
Dimensions

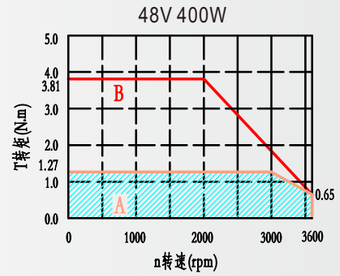
单位/unit：mm

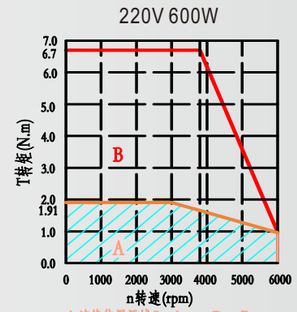
060	R20x30xxHFBxE	R40x30xxHFBxE	R60x30xxHFBxE
LM	54.7(83.2)	71.7(100.2)	90.7(119. 2)
LL	72.7(101.2)	89.7(118.2)	108.7(137.2)

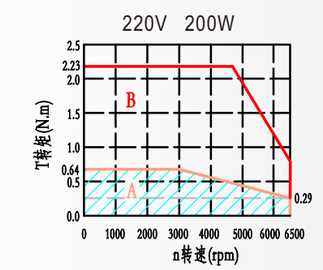
注：1、括号内数据为加刹车后电机相关数值。
Note: 1.The data in bracket is the relevant parameters of motor after braking.

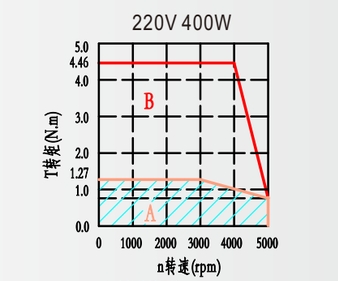
转矩-转速特性
Torque-Speed Characteristics

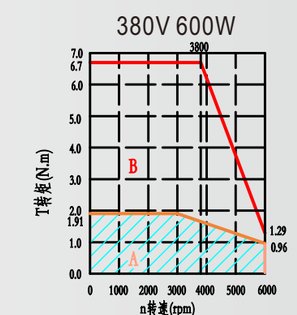






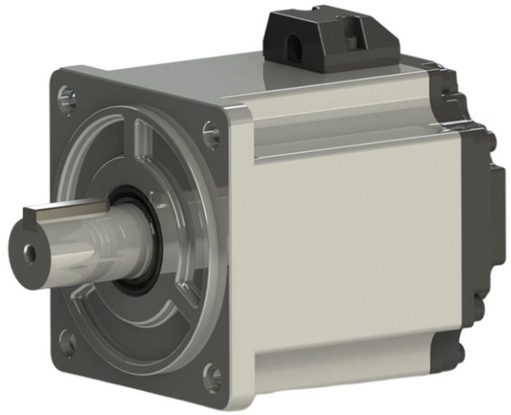






SM080

SERVO MOTORS



基本指标
Basic indicators

Ambient temperature:0~+40℃
Rated time: continous
Ambient humidity:20~80%
Excitation method: Permanent magnet type
Vibration level:V15
Mounted method:flange
Anti-vibration performance:vibration acceleration 24.5m/s(2.5G)
Connection method: Direct connection
Insulation resistance:DC500V,100MG
Rotation method:Clockwise rotation when viewed from the load side under forward rotation command
Insulation voltage:AC1500V 1miunte
Protection method: self cooling,IP54,IP65
Thermal level:F

特性
Characteristic

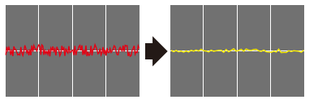
Strong overload capacity

Adopting high magnetic
Energy resistant rare
Earth magnetic steel
F level anti-heat resistance insulation

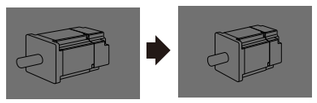
Low position torque



Low torque pulsation



More compact

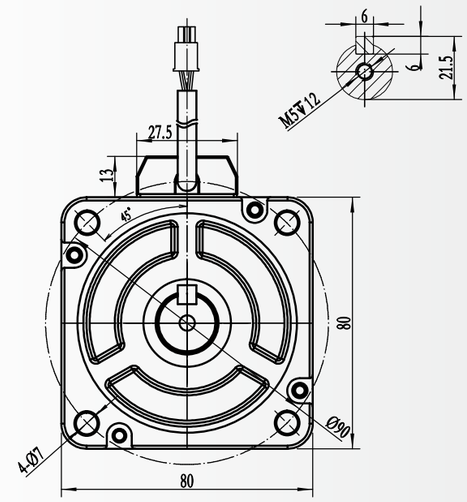


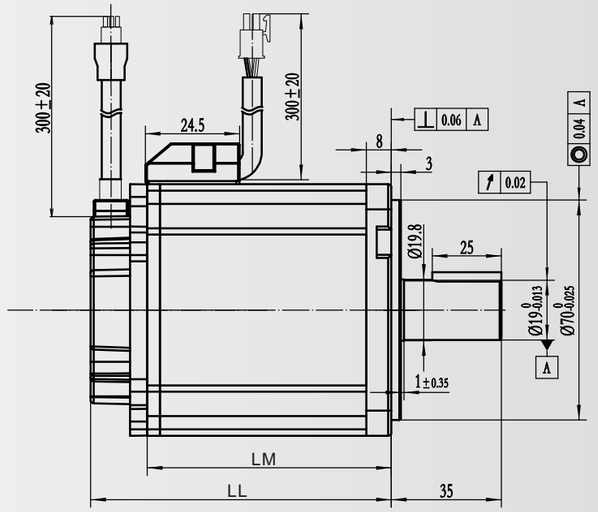
基本参数
Basic Parameters

伺服电机型号 Motor model		R75x30xxHFBxE			1R0x30xxHFBxE		
额定输出功率 Rated power	W	750			1000		
电压 Voltage	V	48	220		48	220	380
额定转矩 Rated torque	N.m	2.39	2.39		3.18	3.18	3.18
瞬间最大转矩 Instantaneous maximum torque	N.m	7.2	8.36		9.6	11.1	11.1
额定电流 Rated Current	A	16.8	3.9		22.2	5.75	3.35
瞬间最大电流 Instantaneous maximum current	A	50.7	14		67.5	20.7	12.1
额定转速 Rated speed	rpm	3000	3000		3000	3000	3000
最高转速 Maximum speed	rpm	3600	5500		3600	6000	6000
极数 Number of poles	Poles)	10					
Torque coefficient	N.m/A	0.149	0.639		0.15	0.575	0.99
线反电势系数 Line back EMF coefficient	mV/rpm	8.99	38.6		9.05	34.8	59.85
线电感 Linear inductance	mH	0.38	7		0.28	4.15	12.3
线电阻 Line resistance	Ω	0.074	1.5		0.05	0.9	2.82
转子转动惯量 Rotor moment of inertia	$kg.m^2.10^{-4}$	1.59(1.797)			2.03(2.225)		
制动器额定电压 Brake rate voltage	V	24V±2.4V					
制动器额定功率 Brake rate power	W	8.5					
制动器保持转矩 Brake torque	N.m	≥3.2					
编码器 Encoder	标准(standard)	17 bit single turn magnetic encoder					
	选项 (option)	17bit multi turn absolute magnetic encoder、23 bit multi turn photoelectric encoder、2500 incremental encoder etc.					
重量 Weight	Kg	2.1(2.93)			2.8(3.5)		

注：括号内数据为加刹车后电机相关参数。
Note: The data in bracket is the relevant parameters of motor after braking.

外形图
Outside View





尺寸
Dimensions

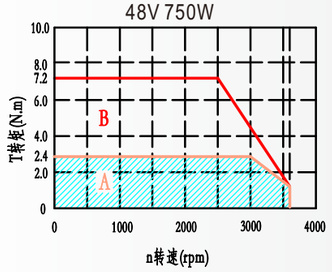
单位/unit：mm

080	R75x30xxHFBxE	1R0x30xxHFBxE
LM	77.7(109.9)	90.7(122.9)
LL	95.7(127.9)	108.7(140.9)

注：1、括号内数据为加刹车后电机相关数值。
Note: 1.The data in bracket is the relevant parameters of motor after braking.

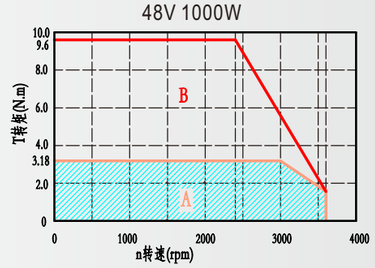
转矩-转速特性
Torque-Speed Characteristics

48V 750W



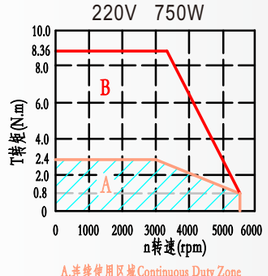
A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

48V 1000W



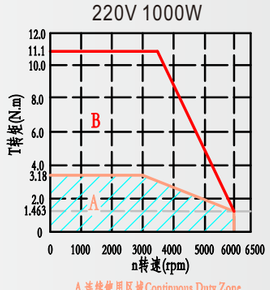
A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

220V 750W



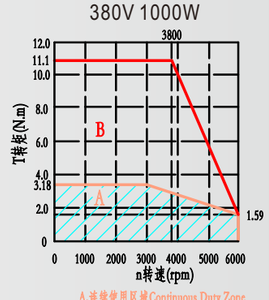
A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

220V 1000W



A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

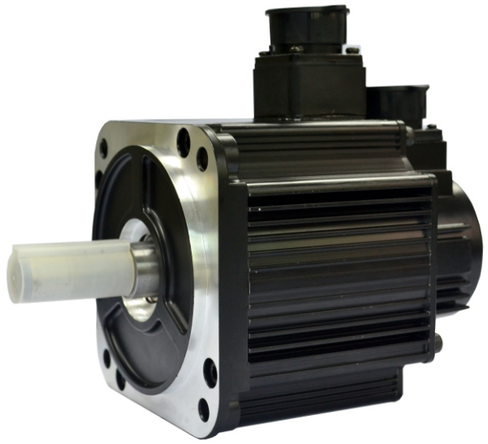
380V 1000W



A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

SM130

SERVO MOTORS



基本指标
Basic indicators

Ambient temperature:0~+40℃
Rated time: continous
Ambient humidity:20~80%
Excitation method: Permanent magnet type
Vibration level:V15
Mounted method:flange
Anti-vibration performance:vibration acceleration 24.5m/s(2.5G)
Connection method: Direct connection
Insulation resistance:DC500V,100MG
Rotation method:Clockwise rotation when viewed from the load side under forward rotation command
Insulation voltage:AC1500V 1miunte
Protection method: self cooling,IP54,IP65
Thermal level:F

特性
Characteristic

Strong overload capacity

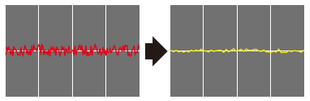
Adopting high magnetic
Energy resistant rare
Earth magnetic steel
Less heat generating

F level anti-heat resistance insulation

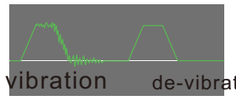
Low positioning torque



Low torque pulsation



Low speed keep smooth

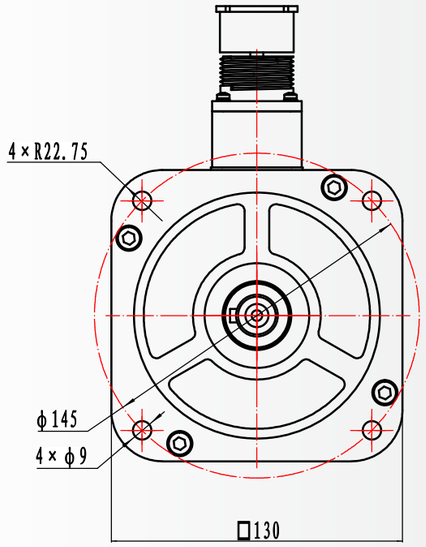


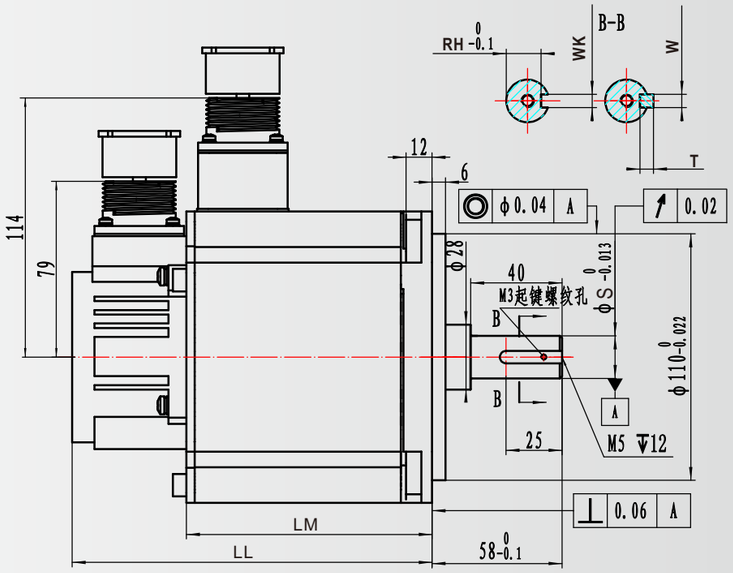
基本参数
Basic Parameters

伺服电机型号 Motor model		R85x15xxMFBxE		1R3x15xxMFBxE		1R8x15xxMFBxE		2R3x15xxMFBxE	
额定输出功率 Rated power	W	850		1300		1800		2300	
电压 Voltage	V	220	380	220	380	220	380	220	380
额定转矩 Rated torque	N.m	5.4		8.28		11.46		14.67	
瞬间最大转矩 Instantaneous maximum torque	N.m	14.2		24.8		28.7		42.6	
额定电流 Rated Current	A	6.2	3.1	9	4.5	13.2	6.6	15.2	7.6
瞬间最大电流 Instantaneous maximum current	A	17	8.5	28.2	14.1	34	17	47	23.5
额定转速 Rated speed	rpm	1500	1500	1500	1500	1500	1500	1500	1500
最高转速 Maximum speed	rpm	3000	3000	3000	3000	3000	3000	3000	3000
极数 Number of poles	Poles)	10							
Torque coefficient	N.m/A	0.923	1.846	0.984	1.968	0.923	1.846	1.038	2.076
线反电势系数 Line back EMF coefficient	mV/rpm	55.8	111.6	59.5	119	55.8	111.6	62.75	125.5
线电感 Linear inductance	mH	9	36	6.65	26.6	4.475	17.9	4.6	18.4
线电阻 Line resistance	Ω	0.65	2.6	0.465	1.86	0.24	0.96	0.243	0.97
转子转动惯量 Rotor moment of inertia	$Kg.m^2.10^{-4}$	8.139(9.584)		11.733(13.252)		15.4(16.919)		18.972(20.5)	
制动器额定电压 Brake rate voltage	V	24V±2.4V							
制动器额定功率 Brake rate power	W	23							
制动器保持转矩 Brake torque	N.m	≥15							
编码器 Encoder	标准(standard)	17 bit single turn magnetic encoder							
	选项 (option)	17multi turn absolute magnetic encoder、23bit multi turn photoelectric encoder 、2500 incremental encoder etc.							
重量 Weight	Kg	5.8(8)		7.25(9.45)		9(11.2)		10.35(12.55)	

注：括号内数据为加刹车后电机相关参数。
Note: The data in bracket is the relevant parameters of motor after braking.

外形图
Outside View





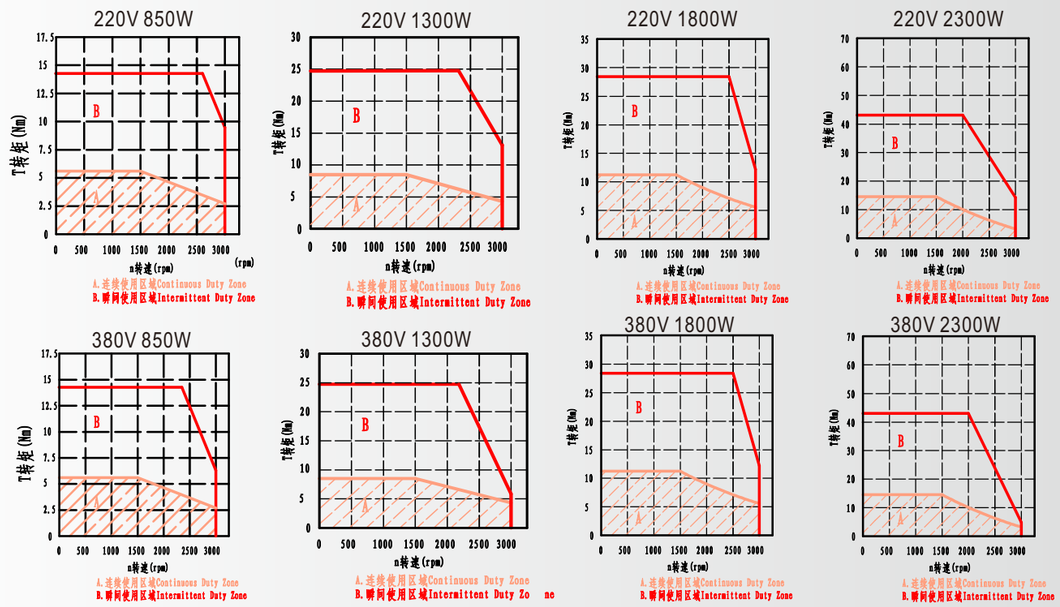
尺寸
Dimensions

单位/unit：mm

130	R85x15xxMFBxE	1R3x15xxMFBxE	1R8x15xxMFBxE	2R3x15xxMFBxE
LM	101(117)	117(135)	135(153)	153(171)
LL	152(168)	168(186)	186(204)	204(222)
S	19	22	24	24
W	5h9($^{0}_{-0.03}$)	6h9($^{0}_{-0.03}$)	8h9($^{0}_{-0.036}$)	8h9($^{0}_{-0.036}$)
WK	5P9($^{-0.012}_{-0.042}$)	6P9($^{-0.012}_{-0.042}$)	8P9($^{-0.015}_{-0.051}$)	8P9($^{-0.015}_{-0.051}$)
RH	16	18.5	20	20
T	5	6	7	7

注：1、括号内数据为加刹车后电机相关数值。
Note: 1.The data in bracket is the relevant parameters of motor after braking.

转矩-转速特性
Torque-Speed Characteristics



SM180

SERVO MOTORS

基本指标
Basic indicators

Ambient temperature:0~+40℃
Rated time: continous
Ambient humidity:20~80%
Excitation method: Permanent magnet type
Vibration level:V15
Mounted method:flange
Anti-vibration performance:vibration acceleration 24.5m/s(2.5G)
Connection method: Direct connection
Insulation resistance:DC500V,100MG
Rotation method:Clockwise rotation when viewed from the load side under forward rotation command
Insulation voltage:AC1500V 1miunte
Protection method: self cooling,IP54,IP65
Thermal level:F

特性
Characteristic

Strong overload capacity

Adopting high magnetic
Energy resistant rare
Earth magnetic steel
Less heat generating

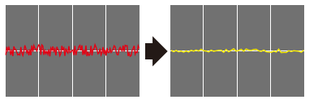
F level anti-heat resistance insulation



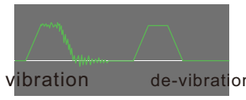
Low positioning torque



Low pusaltion torque



Low speed keep smooth

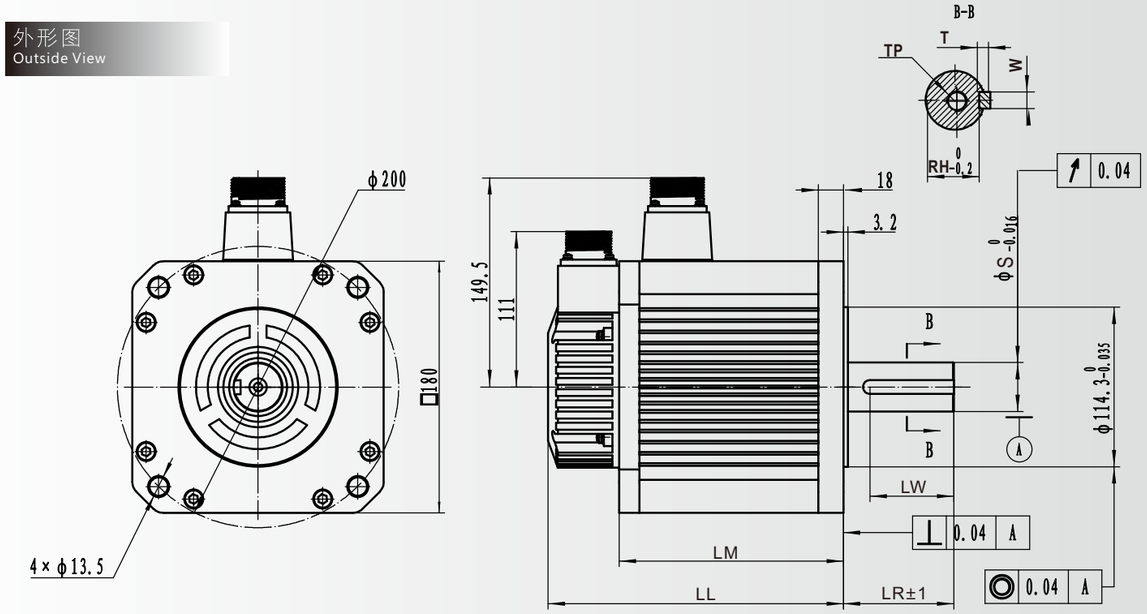


基本参数
Basic Parameters

伺服电机型号 Motor model		2R9x15xxHFBxE	4R4x15xxHFBxE	5R5x15xxHFBxE	7R5x15xxHFBxE
额定输出功率 Rated power	W	2900	4400	5500	7500
电压 Voltage	V	380			
额定转矩 Rated torque	N.m	18.6	28.4	35	48
瞬间最大转矩 Instantaneous maximum torque	N.m	54	71.6	87.6	119
额定电流 Rated Current	A	11.4	15.9	19.6	24.8
瞬间最大电流 Instantaneous maximum current	A	39	43.5	52.4	64.8
额定转速 Rated speed	rpm	1500	1500	1500	1500
最高转速 Maximum speed	rpm	3000	3000	3000	3000
极数 Number of poles	Poles)	10			
Torque coefficient	N.m/A	1.786	1.951	1.94	2.099
线反电势系数 Line back EMF coefficient	mV/rpm	108	118	117.3	126.9
线电感 Linear inductance	mH	10.4	8	5.18	4.2
线电阻 Line resistance	Ω	0.55	0.37	0.195	0.155
转子转动惯量 Rotor moment of inertia	$Kg.m^2.10^{-4}$	42.8(52.5)	62.5(72.19)	90.8(100.36)	128(137.57)
制动器额定电压 Brake rate voltage	V	24V±2.4V			
制动器额定功率 Brake rate power	W	25			
制动器保持转矩 Brake torque	N.m	≥48			
编码器 Encoder	标准(standard)	17 bits single turn magnetic encoder			
	选项 (option)	17bit multi turn absolute magnetic encoder 、23 bit multi turn photoelectric encoder、2500 incremental encoder etc.			
重量 Weight	Kg	14.6(19.5)	18.6(23.5)	24.1(29)	30.6(35.5)

注：括号内数据为加刹车后电机相关参数。
Note: The data in bracket is the relevant parameters of motor after braking.

外形图
Outside View



尺寸
Dimensions

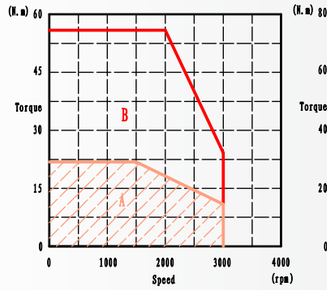
单位/unit：mm

130	2R9x15xxHFBxE	4R4x15xxHFBxE	5R5x15xxHFBxE	7R5x15xxHFBxE
LM	124(172)	148(196)	185(229)	231(275)
LL	175(223)	199(247)	236(280)	282(326)
S	35	35	42	42
W	10h8($^{0}_{-0.022}$)	10h8($^{0}_{-0.022}$)	12h8($^{0}_{-0.027}$)	12h8($^{0}_{-0.027}$)
TP	12▼25	12▼25	16▼32	16▼32
RH	30	30	37	37
T	8h11($^{0}_{-0.09}$)	8h11($^{0}_{-0.09}$)	8h11($^{0}_{-0.09}$)	8h11($^{0}_{-0.09}$)
LR	79	79	113	113
LW	60	60	90	90

注：1、括号内数据为加刹车后电机相关数值。
Note: 1.The data in bracket is the relevant parameters of motor after braking.

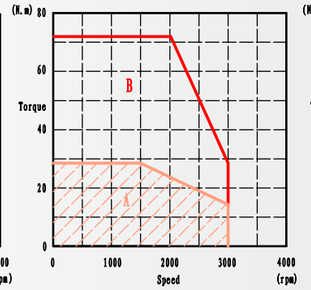
转矩-转速特性
Torque-Speed Characteristics

380V 2900W



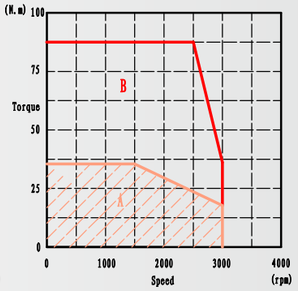
A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

380V 4400W



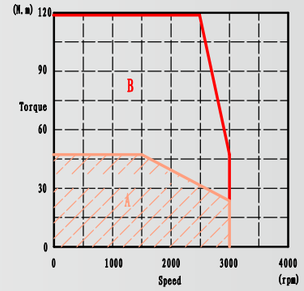
A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

380V 5500W



A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone

380V 7500W



A.连续使用区域Continuous Duty Zone
B.瞬间使用区域Intermittent Duty Zone