Synexus

Servo Motor Product Manual

Efficient, Energy-saving, and Stable

苏州新联电机有限公司

Suzhou Synexus Motor Co., Ltd

Synexus

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Wechat Official Account

COMPANY PROFILE & CO-CREATION TEAM

Suzhou Synexus Motor Co., Ltd. (referred to as Synexus Motor) was established on May 18, 2022, with a registered capital of 30 million RMB. It was jointly funded and established by Suzhou Synland (CATL Holding [Shenzhen A-share 300750]), Megmeet (Shenzhen A-share 002851), INVT (Shenzhen A-share 002334), Ningbo Yunsheng Group (Shanghai A-share 600366), and Suzhou Wuzhong Economic Zone Investment and Startup Team.

Synland 时代新安
CATL Holding [Shenzhen A-share 300750]

invt 英威腾
Shenzhen A-share 002334

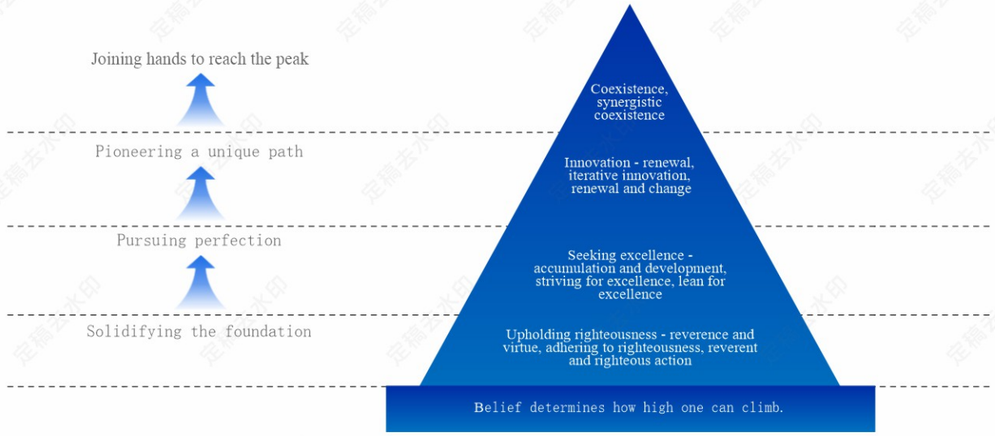
MEGMEET
Shenzhen A-share 002851

融玥投資 Rong Yue Investment
Rong Yue Investment

YS 韵升集团 YUNSHENG GROUP
Shanghai A-share 600366

VISION MISSION VALUES

Synexus Motor is dedicated to the research, development, production, and sales of servo motor products in the field of industrial automation, serving high-end servo motion drive and control device development and production companies both domestically and internationally. Based on proprietary motor development technology and leveraging the rich experience of our team in motor research and manufacturing, we provide precise and reliable servo motor products with scientific and efficient management and strong execution capabilities for industrial control users worldwide. We are committed to becoming a leading servo motor manufacturer in the industry, contributing to the development of China's industrial control industry.



Coexistence is the law of survival

We grow together with customers, employees, partners, and suppliers, compete and cooperate, share and win together, become reliable partners, and jointly build a symbiotic ecosystem in the industrial control industry.

Innovation is the path of development.

Technological innovation is our core and cornerstone, the only way for sustained growth in the future. Our independently developed core products are an important support for our development in the field of servo motors.

Pursuing excellence is our work standard.

Product quality and performance are the foundation of our dignity. We strive for perfection, pursue every detail with dedication, humbly learn from advanced enterprises in other countries, and use professionalism and craftsmanship spirit to produce each product excellently.

Upholding righteousness is our foundation.

We uphold righteousness, operate in compliance with the law, give back to society, and fill our work and life with positive energy.

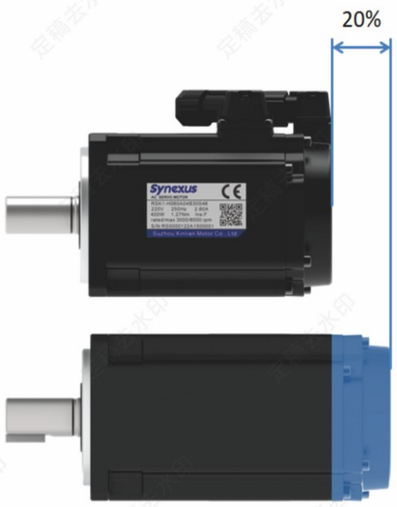
PRODUCT ADVANTAGES

Synexus Servo Motor

Efficient transmission, reliable performance

1 Optimal Size

Shorter body length for faster installation, higher motor power density, achieving the industry's best level.



PRODUCT ADVANTAGES

2 Lower Temperature Rise

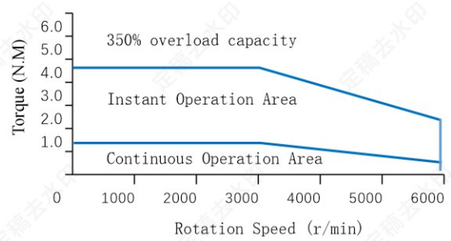
Optimized electromagnetic design and mechanical structure, higher motor efficiency, lower temperature rise.

3 Enhanced Protection

Reliable sealing design to ensure the motor's protection level reaches IP67.

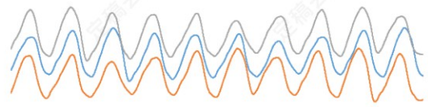
4 tronger SOverload Capability

Electromagnetic simulation optimized design combined with high-performance magnetic steel application, allowing the motor's maximum output torque capability to reach 350%.



5 Lower Torque Fluctuation

Brand-new electromagnetic design, high-precision part processing, and consistent manufacturing process ensure minimal cogging, making the motor operate more smoothly.



RSK1 SERVO MOTOR

RS K1 - H 060 A 04 B30 S 3 6 -**

① Product Types	
RS	Rotary Servo
RD	Direct Drive Rotary

② Product Series	
A1	A1 Series
K1	K1 Series
Q1	Q1 Series

③ Inertia Type	
S	Low Inertia
M	Medium Inertia
H	High Inertia

④ Flange Type	
040	□40 Flange
130	□130 Flange
300	φ300 Flange

⑤ Rated Voltage	
A	AC220V
B	AC380V

⑥ Rated Power	
A5	50W
01	100W
02	200W
04	400W
08	750W
09	850W
10	1.0KW
13	1.3KW
15	1.5KW
18	1.8KW
20	2.0KW
22	2.2KW
25	2.5KW
30	3.0KW
29	2.9KW
44	4.4KW
45	4.5KW
55	5.5KW
75	7.5KW
1A	11KW
1E	15KW

⑦ Rated Rotation Speed	
B08	800rpm
B15	1500rpm
B30	3000rpm
A×10	B×100 C×1000

⑧ Options	
N	Oil Seal, No Brake
S	Oil Seal, No Brake
C	No Oil Seal, with Brake
E	Oil Seal, with Brake

⑨ Encoder Type	
0	No Encoder
1	17-bit Single-turn Absolute Magnetic Electric Encoder
2	17-bit Single-turn/16-bit Multi-turn Absolute Magnetic Electric Encoder
3	23-bit Single-turn Absolute Optical Encoder
4	23-bit Single-turn/16-bit Multi-turn Absolute Optical Encoder

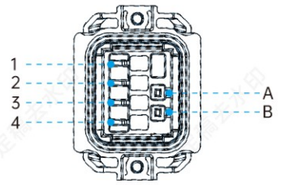
⑩ Main Shaft Type	
0	No Shaft
1	Hollow Shaft with Straight Keyway
2	Straight Shaft without Keyway or Thread Hole
6	Straight Shaft with Keyway and Thread Hole

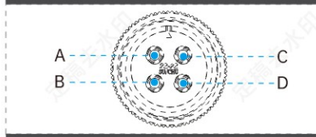
⑪ Customization Options	
	Standard Type (No Markings)
S*	Shaft Customization Type
C*	Lead Wire Customization Type
R*	Speed Customization Type

MOTOR TERMINAL DEFINITION

■ Power Cable Terminal

Power Input Connector

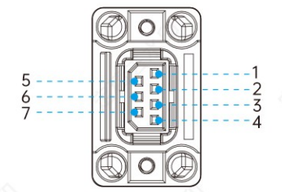
6-pin Terminal Diagram	Pin Number	Usage
	1	U Phase
	2	V Phase
	3	W Phase
	4	Ground Wire
	A	Brake (No Positive or Negative)
	B	Brake (No Positive or Negative)

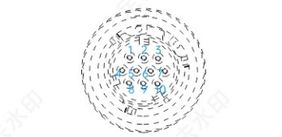
4-pin Terminal Diagram	Pin Number	Usage
	A	U Phase
	B	V Phase
	C	W Phase
	D	Ground Wire

6-pin Terminal Diagram	Pin Number	Usage
	A	U Phase
	B	V Phase
	C	W Phase
	D	Ground Wire
	1	Brake (No Positive or Negative)
	2	Brake (No Positive or Negative)

■ Encoder Cable Terminal

Connectors for encoders

6-pin Terminal Diagram	Pin Number	Usage
	1	DATA+
	2	DATA-
	3	BAT+
	4	BAT-
	5	+5V
	6	0V
	7	FG

10-pin Terminal Diagram	Pin Number	Usage	Pin Number	Usage
	1	DATA+	9	0V
	2	DATA-	10	FG
	4	+5V		
	5	BAT-		
	6	BAT+		

Please note that the schematic diagram is for reference only and may not accurately represent the motor's corresponding relationship and size information.

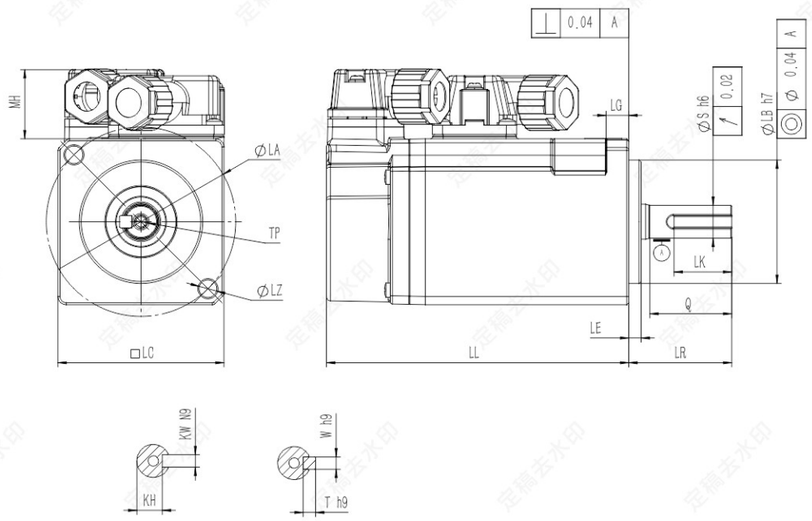
MOTOR RATING SPECIFICATIONS

Servo Motor Model	A1-H040A	K1-H060A		K1-H080A		A1-S100A				A1-S100B	
RS	01B30	02B30	04B30	08B30	10B30	10B30	15B30	20B30	25B30	10B30	15B30
Rated Input Voltage [V]	220	220	220	220	220	220	220	220	220	380	380
Rated Output Power [W]	100	200	400	750	1000	1000	1500	2000	2500	1000	1500
Rated Torque [N·m]	0.32	0.64	1.27	2.39	3.18	3.18	4.77	6.37	7.96	3.18	4.77
Maximum Torque [N·m]	1.12	2.23	4.445	8.36	11.13	9.55	14.3	19.1	23.9	9.55	14.3
Rated Current (Arms)	0.98	1.3	2.6	4.6	6.3	6.4	8.6	11.3	14.7	3.3	4.2
Maximum Current (Arms)	3.9	4.4	8.6	16.3	20.9	28	35	48	53	11	14
Rated Speed (rpm)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Maximum Speed (rpm)	6000	6000	6000	6000	6000	6000	6000	60000	6000	6000	6000
Standard Motor Rotational Inertia (x10^kg·m)	0.031	0.34	0.59	1.72	2.23	1.7	2.52	3.13	3.96	1.7	2.52
Brake Motor Rotational Inertia (x10'kg·m)	0.034	0.35	0.60	1.77	2.28	2.45	3.27	3.88	4.71	2.45	3.27
Brake	Retain										
Brake Rated Power (W)	6.9	7.6	7.6	10	10	17.6	17.6	17.6	17.6	17.6	17.6
Brake Rated Voltage [V]	DC24V										
Brake Holding Torque (N·m)	0.32	1.27	1.27	3.2	3.2	8	8	8	8	8	8
Rated Time	Continuous										
Heat Resistance Class	F										
Insulation Resistance	500V DC,10MΩ and above										
Insulation Voltage	1500VAC for 1 minute (220V Class)/1800VAC for 1 minute (380V Class)										
Excitation Method	Permanent Magnet Type										
Installation Method	Flange Type										
Connection Method	Direct Connection										
Rotational Direction	Counterclockwise (CCW) rotation when viewed from the load side under a positive rotation command										
Vibration Grade	V15										
Ambient Temperature	0~40°C (Non-freezing)										
Ambient Humidity	20%80%RH (Non-condensing)										
Installation Location	Indoor locations without corrosive or explosive gases										
	Locations with good ventilation and minimal dust, garbage, and moisture										
	Locations that are easy to inspect and clean										
	Locations below 1000m altitude without strong magnetic fields										
Storage Environment	When storing the motor without power, please comply with the following environmental requirements										
	Storage Temperature: -20°C+60°C (Non-freezing)										
	Storage Humidity: 20%~80%RH (Non-condensing)										
Shock Resistance (Standard: Flange Surface)	Shock Acceleration: 490m/s² for 2 times										
Vibration Resistance (Standard: Flange Surface)	49m/s²					49m/s²(forward and reverse directions 24.5m/s²)					
IP Rating	Ip67 with oil seal (oil seal installed at the shaft end)										

Servo Motor Model	A1-S100B		A1-M130A			A1-M130B			A1-M180B			
RS	20B30	25B30	09B15	13B15	18B15	09B15	13B15	18B15	29B15	44B15	55B15	75B15
Rated Input Voltage [V]	380	380	220	220	220	380	380	380	380	380	380	380
Rated Output Power [W]	2000	2500	850	1300	1800	850	1300	1800	2900	4400	5500	7500
Rated Torque [N·m]	6.37	7.96	5.39	8.34	11.5	5.39	8.34	11.5	18.6	28.4	35	48
Maximum Torque [N·m]	19.1	23.9	14.2	23.3	28.7	14.2	23.3	28.7	54	71.6	102	119
Rated Current (Arms)	5.6	7.2	6.9	10.7	16.7	3.5	5.1	6.8	23.8	32.8	37.2	54.7
Maximum Current (Arms)	20	26	17	28	42	8.5	12.6	17.9	70	84	110	130
Rated Speed (rpm)	3000	3000	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Maximum Speed (rpm)	60000	6000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Standard Motor Rotational Inertia (x10^kg·m)	3.13	3.96	13.98	19.95	25.14	13.98	19.95	25.14	45.95	67.02	89.57	125.26
Brake Motor Rotational Inertia (x10'kg·m)	3.88	4.71	15.88	21.85	27.04	15.88	21.85	27.04	52.95	74.02	96.57	132.26
Brake	Retain											
Brake Rated Power (W)	17.6	17.6	24	24	24	24	24	24	35	35	35	35
Brake Rated Voltage [V]	DC24V											
Brake Holding Torque (N·m)	8	8	16.5	16.5	16.5	16.5	16.5	16.5	55	55	55	55
Rated Time	Continuous											
Heat Resistance Class	F											
Insulation Resistance	500V DC,10MΩ and above											
Insulation Voltage	1500VAC for 1 minute (220V Class)/1800VAC for 1 minute (380V Class)											
Excitation Method	Permanent Magnet Type											
Installation Method	Flange Type											
Connection Method	Direct Connection											
Rotational Direction	Counterclockwise (CCW) rotation when viewed from the load side under a positive rotation command											
Vibration Grade	V15											
Ambient Temperature	0~40°C (Non-freezing)											
Ambient Humidity	20%80%RH (Non-condensing)											
Installation Location	Indoor locations without corrosive or explosive gases											
	Locations with good ventilation and minimal dust, garbage, and moisture											
	Locations that are easy to inspect and clean											
	Locations below 1000m altitude without strong magnetic fields											
Storage Environment	When storing the motor without power, please comply with the following environmental requirements											
	Storage Temperature: -20°C+60°C (Non-freezing)											
	Storage Humidity: 20%~80%RH (Non-condensing)											
Shock Resistance (Standard: Flange Surface)	Shock Acceleration: 490m/s² for 2 times											
Vibration Resistance (Standard: Flange Surface)	49m/s²					49m/s²(forward and reverse directions 24.5m/s²)						
IP Rating	Ip67 with oil seal (oil seal installed at the shaft end)											

RSA1
SERVO MOTOR

40 Flange Series



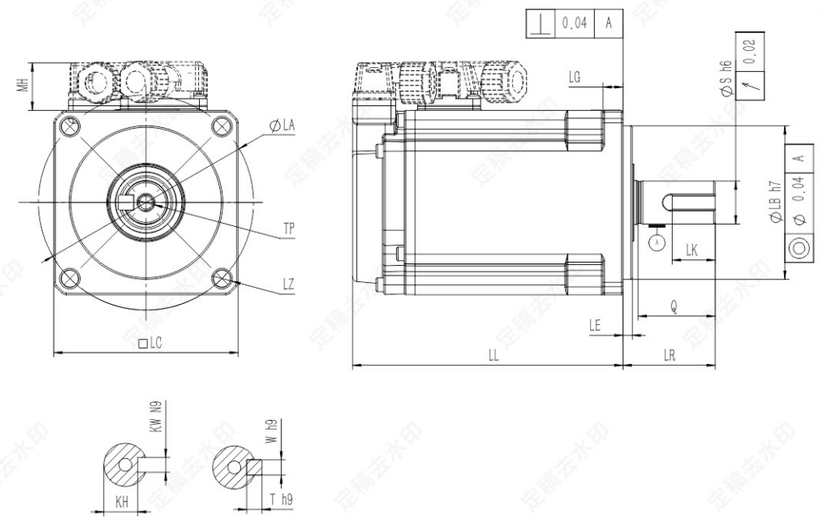
RSA1-	LC	LL	LR	LA	LZ	MH	LG	LE	Q
H040A01	40	73.4 (100.1)	25	46	4.3	16.8	5.5	3	20

RSA1-	LB	S	TP	LK	KH	KW	W	T
H040A01	30	8	M3 Depth 7	14	6.2	3	3	3

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

RSK1
SERVO MOTOR

60 Flange Series



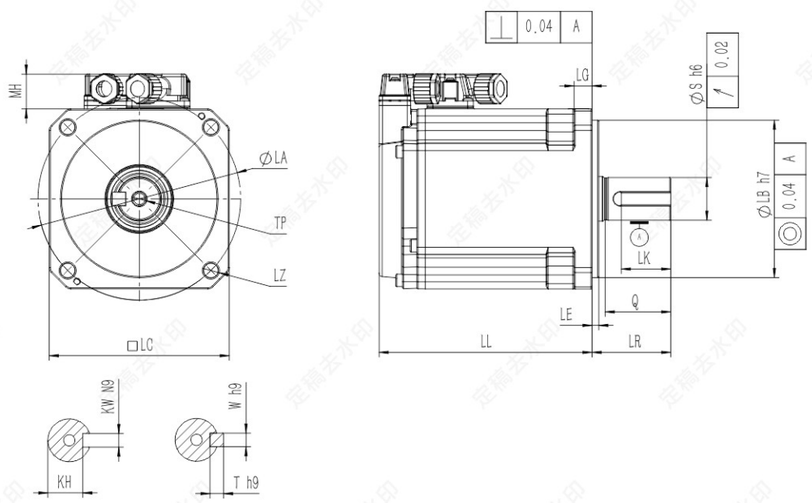
RSK1-	LC	LL	LR	LA	LZ	MH	LG	LE	Q
H060A02	60	70.5 (99.7)	30	70	5.5	15.8	6.5	3	25.5
H060A04	60	88 (117.2)	30	70	5.5	15.8	6.5	3	25.5

RSK1-	LB	S	TP	LK	KH	KW	W	T
H060A02	50	14	M5 Depth 10	14	10.5	5	5	5
H060A04	50	14	M5 Depth 10	14	10.5	5	5	5

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

RSK1 SERVO MOTOR

80 Flange Series



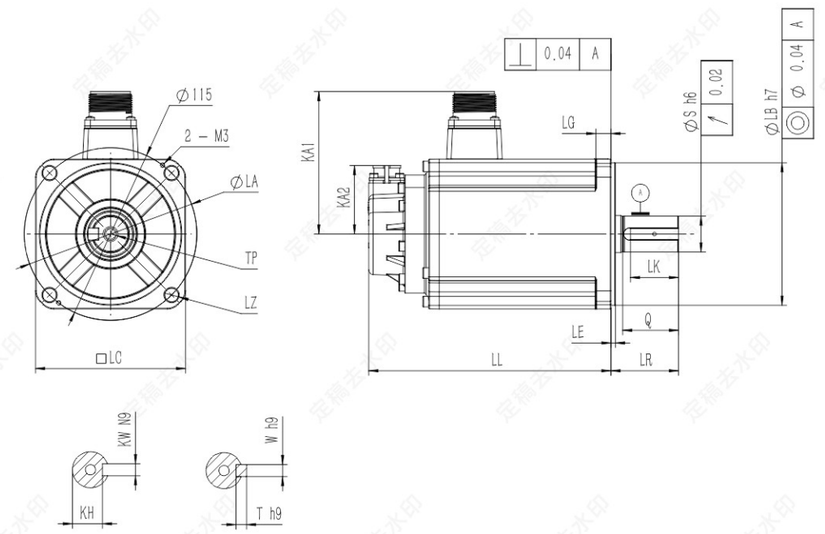
RSK1-	LC	LL	LR	LA	LZ	MH	LG	LE	Q
H080A08	80	94.4 (128.6)	35	90	6.4	15.5	8	3	30.2
H080A10	80	107.9 (142.1)	35	90	6.4	15.5	8	3	30.2

RSK1-	LB	S	TP	LK	KH	KW	W	T
H080A08	70	19	M6 Depth 12	22	15	6	6	6
H080A10	70	19	M6 Depth 12	22	15	6	6	6

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

RSA1 SERVO MOTOR

100 Flange Series



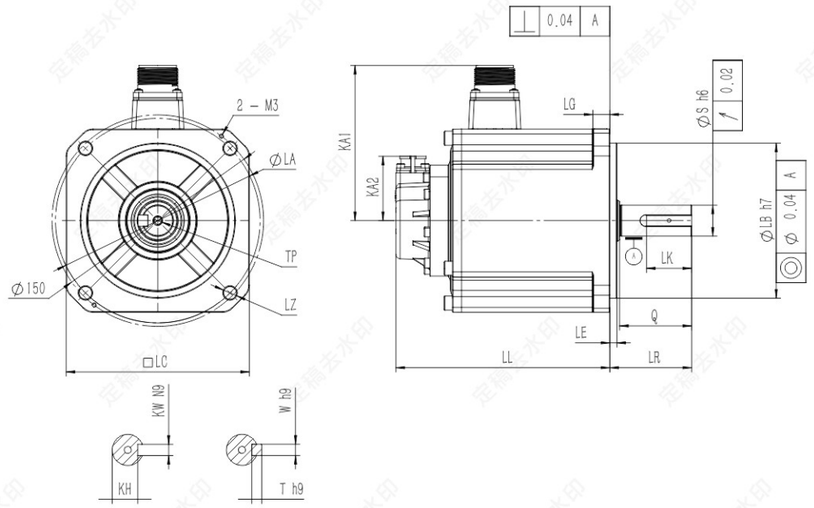
RSA1-	LC	LL	LR	LA	LZ	KA1	KA2	LG	LE
H100(A/B)10	100	126.4 (155)	45	115	9	95	45.69	10.1	3
H100(A/B)15	100	146.4 (175)	45	115	9	95	45.69	10.1	3
S100(A/B)20	100	161.4 (190)	45	115	9	95	45.69	10.1	3
S100(A/B)25	100	183.4 (212)	45	115	9	95	45.69	10.1	3

RSA1-	Q	LB	S	TP	LK	KH	KW	W	T
H100(A/B)10	37.5	95	24	M6 Depth 12	32	20	8	8	8
H100(A/B)15	37.5	95	24	M6 Depth 12	32	20	8	8	8
S100(A/B)20	37.5	95	24	M6 Depth 12	32	20	8	8	8
S100(A/B)25	37.5	95	24	M6 Depth 12	32	20	8	8	8

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

RSA1
SERVO MOTOR

130 Flange Series



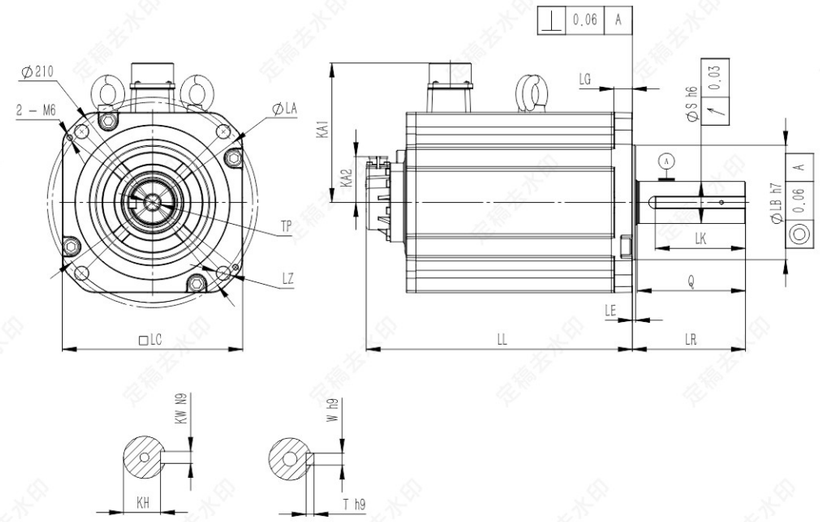
RSA1-	LC	LL	LR	LA	LZ	KA1	KA2	LG	LE
M130(A/B)09	130	135.6 (166.6)	58	145	9	110	45.7	12	5
M130(A/B)13	130	151.6 (182.6)	58	145	9	110	45.7	12	5
M130(A/B)18	130	167.6 (198.6)	58	145	9	110	45.7	12	5

RSA1-	Q	LB	S	TP	LK	KH	KW	W	T
M130(A/B)09	51	110	22	M6 Depth 12	32	18	8	8	7
M130(A/B)13	51	110	22	M6 Depth 12	32	18	8	8	7
M130(A/B)18	51	110	22	M6 Depth 12	32	18	8	8	7

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

RSA1
SERVO MOTOR

180 Flange Series



RSA1-	LC	LL	LR	LA	LZ	KA1	KA2	LG	LE
M180B29	180	171.5 (216.5)	79	200	13.5	137.4	45.69	18	3.2
M180B44	180	195 (240)	79	200	13.5	137.4	45.69	18	3.2
M180B55	180	218.5 (263.5)	113	200	13.5	137.4	45.69	18	3.2
M180B75	180	265.5 (310.5)	113	200	13.5	137.4	45.69	18	3.2

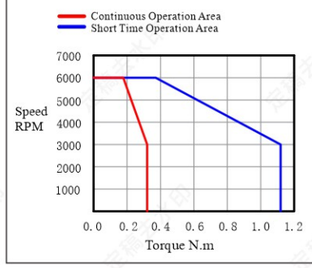
RSA1-	Q	LB	S	TP	LK	KH	KW	W	T
M180B29	74	143.3	35	M12 Depth 25	60	37	10	10	8
M180B44	74	143.3	35	M12 Depth 25	60	37	10	10	8
M180B55	108	143.3	42	M16 Depth 32	90	37	12	12	8
M180B75	108	143.3	42	M16 Depth 32	90	37	12	12	8

(Note: The value in parentheses represents the values for a servo motor with a holding brake.)

TABLE OF TORQUE CHARACTERISTICS

Small Capacity Series-220v

RSA1-H040A01B30



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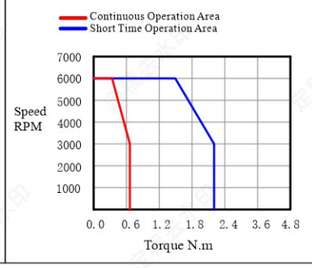

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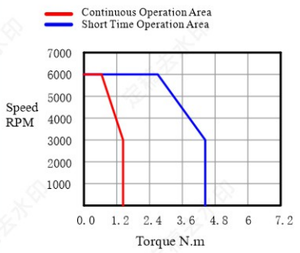

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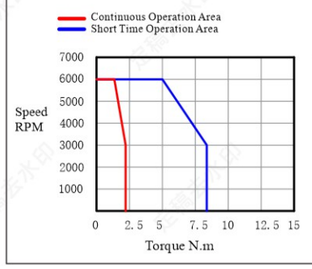
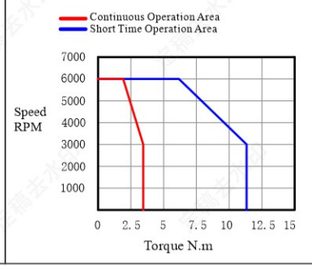
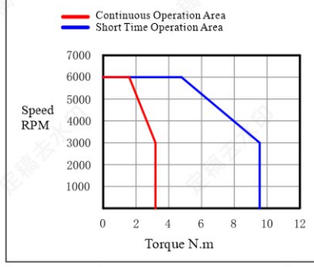


RSK1-H080A10B30

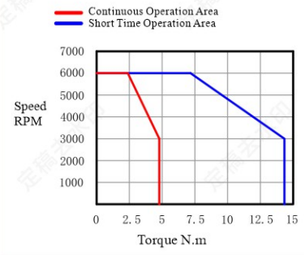


Medium Capacity Series-220v

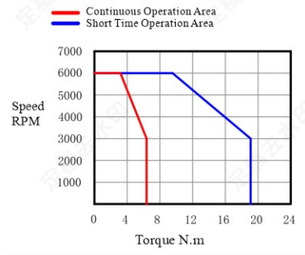
RSA1-S100A10B30



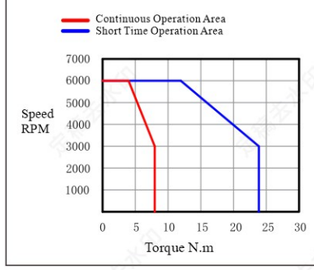
RSA1-S100A15B30



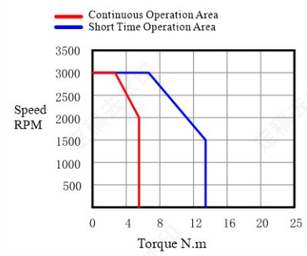
RSA1-S100A20B30



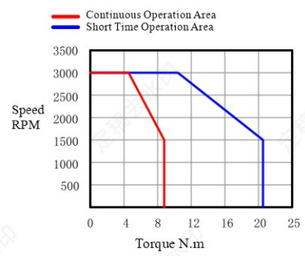
RSA1-S100A25B30



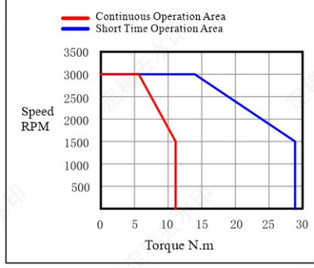
RSA1-M130A09B15



RSA1-M130A13B15

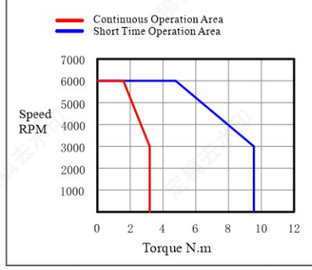


RSA1-M130A18B15

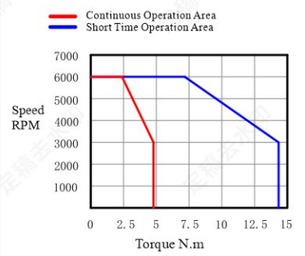


Medium Capacity Series-380v

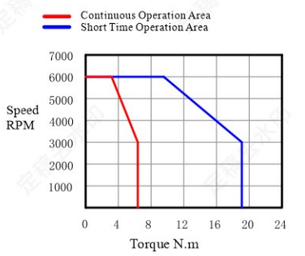
RSA1-S100B10B30



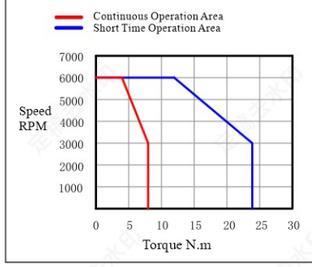
RSA1-S100B15B30



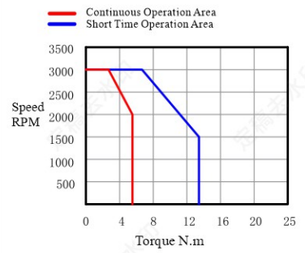
RSA1-S100B20B30



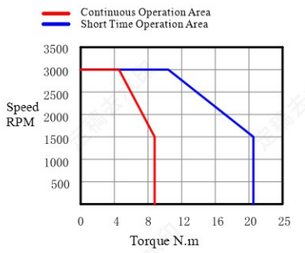
RSA1-S100B25B30



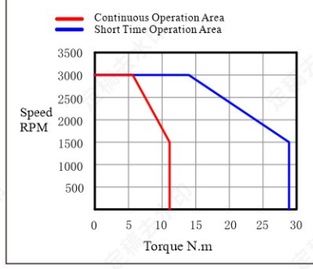
RSA1-M130B09B15



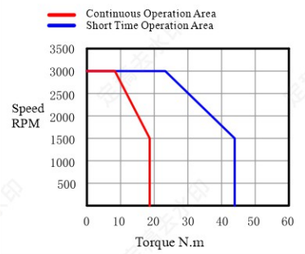
RSA1-M130B13B15



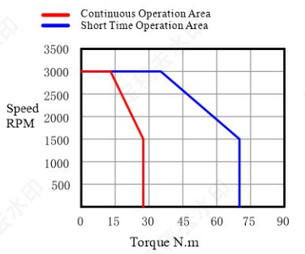
RSA1-M130B18B15



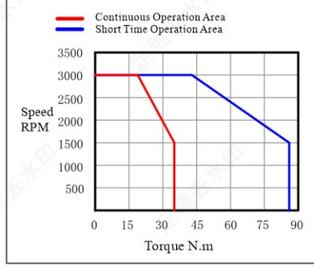
RSA1-M180B29B15



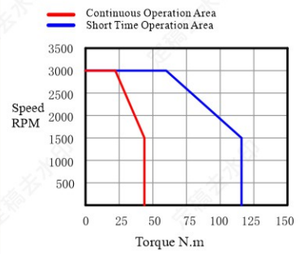
RSA1-M180B44B15



RSA1-M180B55B15



RSA1-M180B75B15



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