FACTORY AUTOMATION

FOCUS ON AUTOMATION SYSTEM
SCHEME 14 YEARS

DORNA™

DS2/DM1

SERVO SERIES

SINCE 2006

DORNA TECHNOLOGY CO,.LTD

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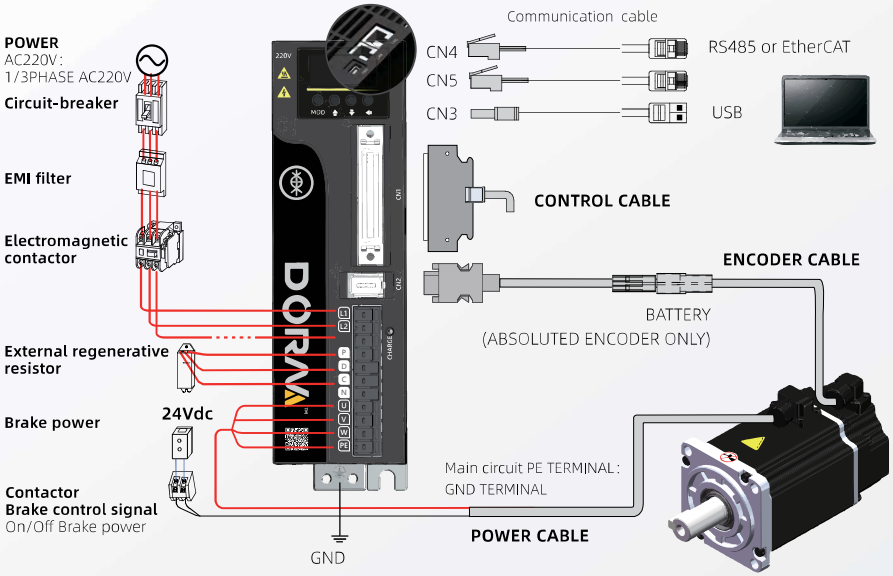
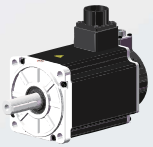
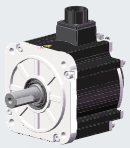
SCAN QR CODE FOR MORE DETAILS

※ Version：2020.5V1.0

CONTROL SYSTEM SCHEME PROVIDED BY US



AC SERVO DIRVER DS2『東』SERIES

A type case				B type case	
					
DS2P-01AS	DS2P-02AS	DS2P-04AS	DS2P-08AS	DS2P-10AS	DS2P-15AS
Single Phase 220V				Single/3 phase 220V	
					
DM1M-01A40	DM1M-02A60	DM1M-04A60	DM1M-08A80	DM1M-10A80 DM1M-09A130 DM1S-10A100 DM1S-10A130	DM1M-13A130 DM1S-15A100 DM1S-15A130

Download E-catalogue on our website

NOMENCLATURE FOR SERVO DRIVES

DS2 P -08 A S -* -****
① ② ③ ④ ⑤ ⑥ ⑦

① Series:DS2

② Type
P: Impulse

③ Rated power
01: 100W
02: 200W
04: 400W
08: 750W
10: 1000W
15: 1500W

④ Voltage
A: 220V

⑤ Encoder type
S: Serial encoder interface

⑥ No-standard
No: General

⑦ Factory code
No: Standard

NOMENCLATURE FOR SERVO MOTORS

DM1 M -04 A 60 J 8 S -**
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series: DM1

② Rotor inertia
S: Low
M: Medium
H: High
G: Ultra high

③ Capacity
01: 100W
02: 200W
04: 400W
08: 750W
09: 850W
10: 1000W
13: 1300W
15: 1500W

④ Voltage
A: 220V

⑤ Flange size
40: □40mm
60: □60mm
80: □80mm
100: □100mm
130: □130mm

⑥ Encoder type
I: 17-bit single turn absolute magnetic encoder
J: 16-bit multi-turn/17-bit single turn absolute magneticl encoder
M: 23-bit single turn absolute optical encoder
L: 17-bit multi-turn/23-bit single turn absolute optical encoder

⑦ Shaft end
7: No keyway
8: With keyway, with screw hole

⑧ Options
1: No
B: With brake
S: With oil seal
E: With brake, with oil seal

⑨ Customization
No: IP65/IP67 connector
-**: Customerized

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DM1 SERIES SERVO MOTORS

DM1 SERIES SERVO MOTOR FEATURES

High performance

Descriptions

Max speed 6000RPM
Up to 3.5 times overload

17/23bit encoders

Descriptions

①17bit single turn absolute magnetic encoders, can work long time in oily environment.
②23bit absolute optical encoders, 8 million ppr, resolution up to 0.15 arc/sec.

IP67

Descriptions

Up to IP67 protection class

High vibration resistance

Descriptions

Magnetic encoder can work in vibrations up to 20g.
Optical encoder can work in vibrations up to 5g.

NAMING RULES DM1 series servo motors

Item	DM	1	M	- 01	A	40	I	8	S	- **
Series										
Type	Design sequence	1								
Rotor inertia	Ultra low		U							
	Low		S							
	Medium		M							
	High		H							
	Ultra high		G							
Capacity	50W			A5						
	100W			01						
	200W			02						
	400W			04						
	750W			08						
	850W			09						
	1.0KW			10						
	1.3KW			13						
	1.5KW			15						
	1.8KW			18						
	2.0KW			20						
	2.5KW			25						
	2.9KW			29						
	3.0KW			30						
	4.4KW			44						
	5.5KW			55						
	7.5KW			75						
Voltage	220V				A					
	380V				B					

NAMING RULES DM1 series servo motors

Item	DM	1	M	- 01	A	40	I	8	S	- **
Flange size	□40mm					40				
	□60mm					60				
	□80mm					80				
	□100mm					100				
	□130mm					130				
	□180mm					180				
Encoder type	17-bit signle turn absolute magnetic encoder						I			
	17-bit multi-turn/23-bit single turn absolute optical encoder						L			
Shaft end	No keyway							7		
	With keyway, with screw hole							8		
Options	No brake, no oil seal								1	
	With brake, no oil seal								B	
	No brake, with oil seal								S	
	With brake, with oil seal								E	
Customization	Standard*									/
	IP67 connector (□40、□60、□80)									-P
	Customerized									-**

*notes: □40、□60、□80: with oil seal IP65 protection class, except connectors
□100、□130、□180: with oil seal, IP67 protection class

SPECIFICATIONS DM1 series servo motor

Flange	□40		□60		□80		□100			
Capacity	50W	100W	200W	400W	750W	1.0KW	1.0KW	1.5KW	2.0KW	2.5KW
Voltage	220V									
Rated time	Continuous									
Heat resistance grade	F									
Insulation resistance	DC500V, 1S, ≥100MΩ									
Dielectric Strength	AC1800V, 1S, leak current≤8mA									
Excitation mode	Permanent magnetic									
Installation	Flange type									
Connection	Direct connection									
Rotating direction	Position direction: CCW when viewing from load side									
Vibraiton class	V15									
Environment condition										
Ambient temperature for use	0℃-40℃									
Ambient humidity for use	20%-80%RH (no condensing)									
Environment for use	● indoor places without corrosive or explosive gas ● places with good ventilation, less dust, garbage and moisture ● places convenient for inspection and cleaning ● < 1000m above sea level (when 1000m-2000m, it can be used after the derating) ● places without strong magnetic field									
Environment for storage	Please observe the following environmental requirements when keeping the motor in the state of no power supply. Storage temperature: - 20 ℃ - + 60 ℃ (not frozen) Storage humidity: 20% - 80% RH (no condensing)									
Impact strength										
Impact acceleration (based on the standard of flange)	490m/s²									
Impact times	2time									
Vibration resistance										
Vibration acceleration (based on the standard of flange)	490m/s²						49m/s²(front and end direction 24.5m/s²)			

DM1 Motor parameters

Flange	□130							□180			
Capacity	1.0KW	1.5KW	2.0KW	3.0KW	850W	1.3KW	1.8KW	2.9KW	4.4KW	5.5KW	7.5KW
Voltage	220V				380V						
Rated time	Continuous										
Heat resistance grade	F										
Insulation resistance	DC500V, 1S, ≥100MΩ										
Dielectric Strength	AC1800V, 1S, leak current≤8mA				AC2200V, 1S, leak current≤8mA						
Excitation mode	Permanent magnetic										
Installation	Flange type										
Connection	Direct connection										
Rotating direction	Position direction: CCW when viewing from load side										
Vibraiton class	V15										
Environment condition											
Ambient temperature for use	0℃-40℃										
Ambient humidity for use	20%-80%RH (no condensing)										
Environment for use	● indoor places without corrosive or explosive gas ● places with good ventilation, less dust, garbage and moisture ● places convenient for inspection and cleaning ● < 1000m above sea level (when 1000m-2000m, it can be used after the derating) ● places without strong magnetic field										
Environment for storage	Please observe the following environmental requirements when keeping the motor in the state of no power supply. Storage temperature: - 20 ℃ - + 60 ℃ (not frozen) Storage humidity: 20% - 80% RH (no condensing)										
Impact strength											
Impact acceleration (based on the standard of flange)	490m/s²										
Impact times	2time										
Vibration resistance											
Vibration acceleration (based on the standard of flange)	49m/s²(front and end direction 24.5m/s²)										24.5m/s²

MODELS DM1 series servo motors

Flange size	□40		□60		□80	
Rated capacity (kW)	0.05	0.1	0.2	0.4	0.75	1
Rated voltage (v)	220	220	220	220	220	220
Rated torque (N·m)	0.16	0.32	0.64	1.27	2.39	3.18
Max torque (N·m)	0.56	1.12	2.24	4.50	8.40	11.13
Rated current (A)	1.30	1.30	1.50	2.80	4.80	6.40
Max current (A)	4.55	4.55	5.25	10.80	16.80	22.4
Rated speed (rpm)	3000	3000	3000	3000	3000	3000
Max speed (rpm)	6000	6000	6000	6000	6000	6000
Rotary inertia (10-4kg.m²)	0.026	0.041	0.207	0.376	1.38	1.75
Brake type	Holding	Holding	Holding	Holding	Holding	Holding
Brake capacity (w)	6.1	6.1	7.3	7.3	8.5	8.5
Brake voltage (v)	24	24	24	24	24	24
Brake friction torque (N·m)	0.32	0.32	1.27	1.27	3.18	3.18
Brake suction time (ms)	100	100	100	100	100	100
Brake release time (ms)	60	60	80	80	80	80
Brake inertia (10-4kg.m²)	0.002	0.002	0.013	0.013	0.05	0.05

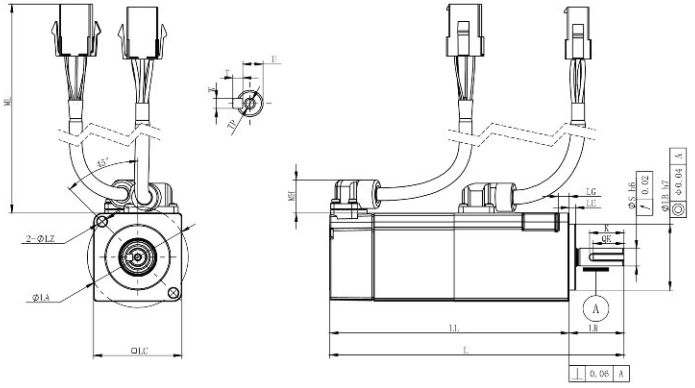
Flange size	□100				
Rated capacity (kW)	1	1.5	2	2.5	
Rated voltage (v)	220	220	220	220	
Rated torque (N·m)	3.18	4.77	6.37	7.96	
Max torque (N·m)	9.55	14.30	19.10	23.88	
Rated current (A)	6.60	8.20	11.30	14.69	
Max current (A)	28.00	35.00	48.00	63.17	
Rated speed (rpm)	3000	3000	3000	3000	
Max speed (rpm)	5000	5000	5000	5000	
Rotary inertia (10-4kg.m²)	2.15	3.1	4.06	5.02	
Brake type	Holding	Holding	Holding	Holding	
Brake capacity (w)	14.4	14.4	14.4	14.4	
Brake voltage (v)	24	24	24	24	
Brake friction torque (N·m)	8	8	8	8	
Brake suction time (ms)	120	120	120	120	
Brake release time (ms)	60	60	60	60	
Brake inertia (10-4kg.m²)	0.35	0.35	0.35	0.35	

Flange size	□130						
Rated capacity (kW)	1	1.5	2	3	0.85	1.3	1.8
Rated voltage (v)	220	220	220	220	380	380	380
Rated torque (N·m)	4.77	7.16	9.55	14.32	5.39	8.34	11.50
Max torque (N·m)	14.30	21.50	28.60	42.96	16.17	25.02	34.50
Rated current (A)	5.20	7.65	9.90	16.92	3.30	5.00	6.60
Max current (A)	15.60	24.00	29.70	50.76	9.90	15.00	19.80
Rated speed (rpm)	2000	2000	2000	1500	1500	1500	1500
Max speed (rpm)	3000	3000	3000	3000	3000	3000	3000
Rotary inertia (10-4kg.m²)	6.74	9.66	12	13.68	12.9	19.9	26
Brake type	Holding	Holding	Holding	Holding	Holding	Holding	Holding
Brake capacity (w)	23	23	23	23	23	23	23
Brake voltage (v)	24	24	24	24	24	24	24
Brake friction torque (N·m)	16	16	16	16	16	16	16
Brake suction time (ms)	100	100	100	100	100	100	100
Brake release time (ms)	80	80	80	80	80	80	80
Brake inertia (10-4kg.m²)	1.22	1.22	1.22	1.22	1.22	1.22	1.22

Flange size	□180				
Rated capacity (kW)	2.9	4.4	5.5	7.5	
Rated voltage (v)	380	380	380	380	
Rated torque (N·m)	18.60	28.40	35.00	48.00	
Max torque (N·m)	46.50	71.00	87.50	120.00	
Rated current (A)	11.90	16.50	20.85	25.70	
Max current (A)	29.75	41.25	52.13	64.25	
Rated speed (rpm)	1500	1500	1500	1500	
Max speed (rpm)	3000	3000	3000	3000	
Rotary inertia (10-4kg.m²)	51.8	85.7	103.8	137.8	
Brake type	Holding	Holding	Holding	Holding	
Brake capacity (w)	32.2	32.2	32.2	32.2	
Brake voltage (v)	24	24	24	24	
Brake friction torque (N·m)	48	48	48	48	
Brake suction time (ms)	100	100	100	100	
Brake release time (ms)	80	80	80	80	
Brake inertia (10-4kg.m²)	2.43	2.43	2.43	2.43	

DM1 series servo motor dimensions

40 flange motors (unit: mm)

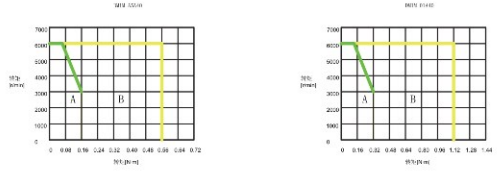


□40 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	LA	LB	LC	LE	LG
50W	88 (120)	63 (95)	25	46	30	40	3	3.5
100W	102 (134)	77 (109)	25	46	30	40	3	3.5

LZ	S	K	QK	W	T	U	TP
4.5	8	15.7	14	3	3	6.2	M3 deep 7
4.5	8	15.7	14	3	3	6.2	M3 deep 7

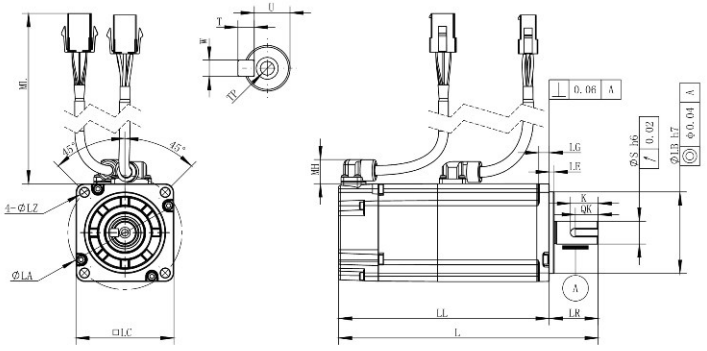
(with brackets): dimensions with brake



DM1 series servo motor T-N curves

DM1 series servo motor dimensions

60 flange motors (unit: mm)

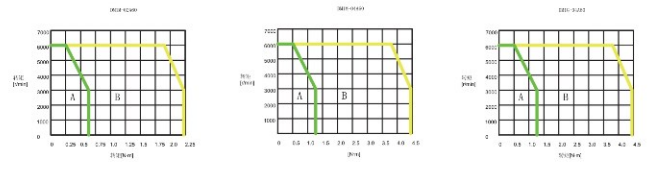


□60 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	LA	LB	LC	LE	LG
200W	108.5 (142)	78.5 (112)	30	70	50	60	3	6.5
400W	126.5 (60)	96.5 (130)	30	70	50	60	3	6.5

LZ	S	K	QK	W	T	U	TP
5.5	14	17	14	5	5	11	M5 deep 12
5.5	14	17	14	5	5	11	M5 deep 12

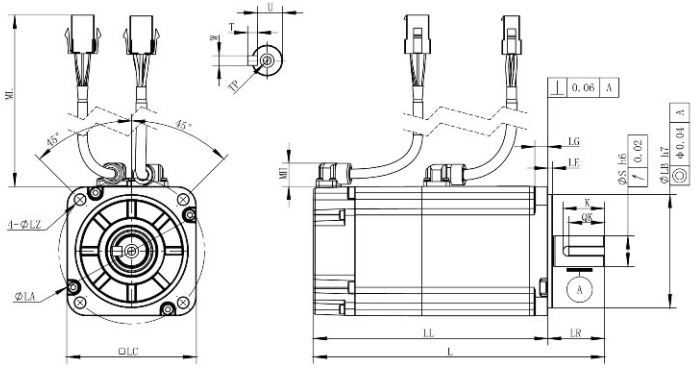
(with brackets): dimensions with brake



DM1 series servo motor T-N curves

DM1 series servo motor dimensions

80 flange motors (unit: mm)

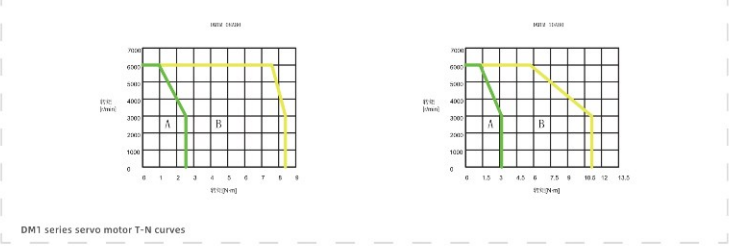


☐80 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	LA	LB	LC	LE	LG	LZ
750W	143 (180)	108 (145)	35	90	70	80	3	8	6.6
1000W	155 (192)	120 (157)	35	90	70	80	3	8	6.6

S	K	QK	W	T	U	TP
19	22	25.5	6	6	15.5	M6 deep 14
19	22	25.5	6	6	15.5	M6 deep 14

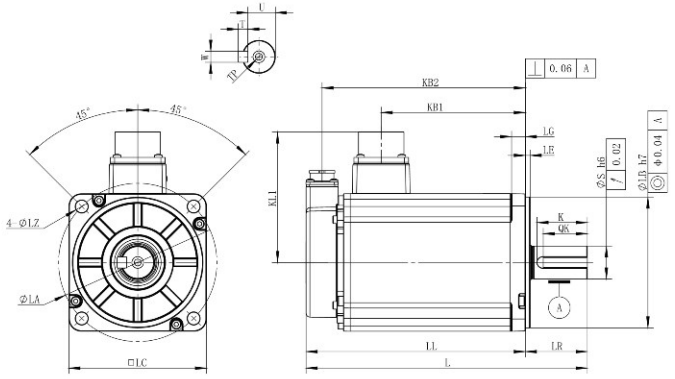
(with brackets): dimensions with brake



DM1 series servo motor T-N curves

DM1 series servo motor dimensions

100 flange motors (unit: mm)

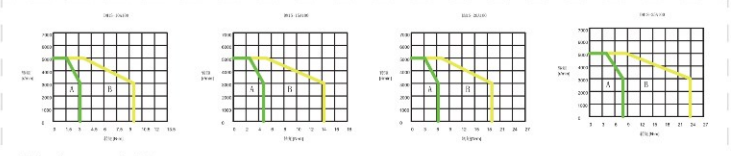


☐100 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	KB1	KB2	KL1	LA	LB
1KW	165	120 (160)	45	65	108 (148)	95	115	95
1.5KW	185	140 (180)	45	85	128 (168)	95	115	95
2KW	205	160 (200)	45	105	148 (188)	95	115	95
2.5KW	225	180 (220)	45	125	168 (208)	95	115	95

LC	LE	LG	LZ	S	K	QK	W	T	U	TP
100	3.5	10	9	24	36.5	32	8	7	20	M6 deep 16
100	3.5	10	9	24	36.5	32	8	7	20	M6 deep 16
100	3.5	10	9	24	36.5	32	8	7	20	M6 deep 16
100	3.5	10	9	24	36.5	32	8	7	20	M6 deep 16

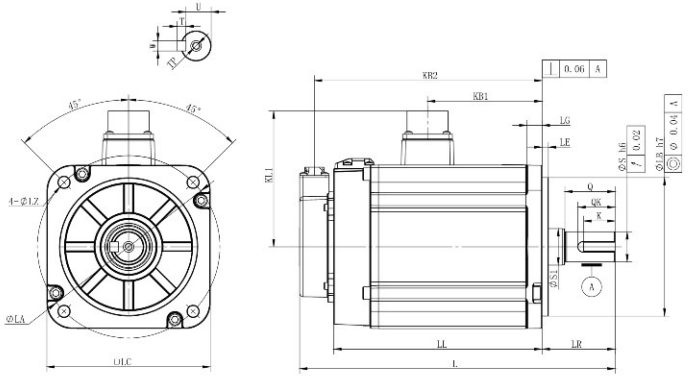
(with brackets): dimensions with brake



DM1 series servo motor T-N curves

DM1 series servo motor dimensions

130（Minor inertia） flange motors (unit: mm)

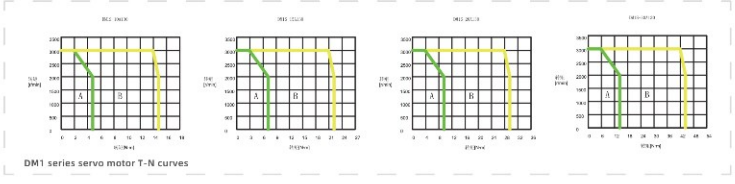


□130 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	KB1	KB2	KL1	LA	LB	LC
1KW	172（201）	117（146）	55	61	105（134）	108	145	110	130
1.5KW	187（216）	132（161）	55	76	120（149）	108	145	110	130
2KW	202（231）	147（176）	55	91	135（164）	108	145	110	130
3KW	232（271）	177（206）	55	121	165（194）	108	145	110	130

LE	LG	LZ	S	S1	Q	K	QK	W	T	U	TP
5	12	9	22	28	49	32	36.5	8	7	18	M6 deep 16
5	12	9	22	28	49	32	36.5	8	7	18	M6 deep 16
5	12	9	22	28	49	32	36.5	8	7	18	M6 deep 16
5	12	9	22	28	49	32	36.5	8	7	18	M6 deep 16

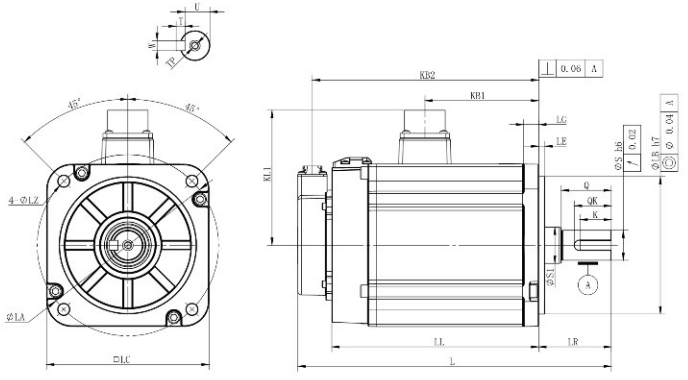
(with brackets): dimensions with brake



DM1 series servo motor T-N curves

DM1 series servo motor dimensions

130（Middle inertia） flange motors (unit: mm)



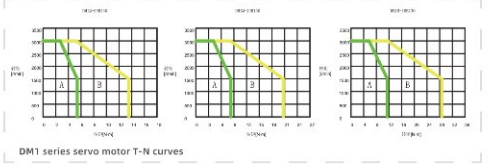
□130 flange motor dimensions (unit: mm)

Capacity	L	LL	LR	KB1	KB2	KL1	LA	LB
0.85KW	195（219）	137（166）	58	61	125（152）	108	145	110
1.3KW	211（238）	153（185）	58	76	141（168）	108	145	110
1.8KW	229（256）	171（203）	58	91	159（185）	108	145	110

LC	LE	LG	LZ	S	S1	Q	K	QK	W
130	5	12	9	19	28	40	27.5	25	5
130	5	12	9	22	28	40	28.5	25	6
130	5	12	9	24	28	40	29.5	25	8

T	U	TP
5	16	M5 deep 12
6	18.5	M5 deep 12
7	20	M5 deep 12

(with brackets): dimensions with brake



DM1 series servo motor T-N curves