



19120307A00

This brochure is subject to change without prior notice.
Copyright © Shenzhen Inovance Technology Co., Ltd.

Shenzhen Inovance Technology Co., Ltd.
Shenzhen Inovance Technology Co., Ltd.
www.inovance.com

Suzhou Inovance Technology Co., Ltd.
Suzhou Inovance Technology Co., Ltd.
www.inovance.com

Add.:Inovance Headquarters Tower, High-tech Industrial Park, Guanlan Street, Longhua New District, Shenzhen
Tel.: +86-755-2979 9595 **Fax:**+86-755-2961 9897

Add.:No. 16 Youxiang Road, Yuexi Town, Wuzhong District, Suzhou
Tel.: +86-512-6637 6666 **Fax:**+86-512-6285 6720

MS1-R

Series Servo Motor



About us

Shenzhen Inovance Technology Co., Ltd. (stock code: SZ.300124) is founded in 2003 and has a current stock market value of about RMB 160 billion. Inovance is the key force in developing industrial automation and drive technologies in China and a provider of optical-mechatronicshydraulic-pneumatic integrated solutions covering drive, control, motor, and precision machineeries.

Inovance achieves an annual revenue of RMB 17.945 billion and an operating profit of RMB 3.573 billion in 2021, which grew by 56% and 70% respectively on yoy basis. Headquartered in Shenzhen, Inovance has established multiple production bases in Suzhou, Changzhou, Yueyang, and Nanjing, as well as subsidiaries, resident offices, and service centers in over 20 countries and regions worldwide. As of 2021, Inovance has obtained 2,186 patents and software copyrights. Through continuous investment in R&D, Inovance has enhanced its technical strength in such fields as motor and drive control, industrial control software, electric drive assembly for new energy vehicles, digitalization, and industrial robots.

Inovance is dedicated to the development of core technologies in motor drive and control, power electronics, and industrial Internet communication, with business covering industrial automation, elevator electrical assessories, new energy vehicles, industrial robots, and rail transit. Inovance aims to provide integrated solutions and industry-tailored products based on various industry needs, creating continuous values for customers. The core technologies of Inovance not only covers the information layer, control layer, drive layer, execution layer, and perception layer, but also covers such fields as industrial automation, elevator, new energy vehicle, and trail transit, including:

- ① high performance vector control technology, servo control technology, and high-power IGCT drive technology in the drive layer;
- ② small- to large-scale PLC technology, CNC control technology, robot control technology, and high-speed bus technology in the control layer;
- ③ high-performance servo motor technology, high-efficiency motor technology, high-speed motor and magnetic levitation bearing technology, high-precision encoder design and process technology, precision transmission machine design and process technology, and image recognition technology in the execution layer;
- ④ industrial Internet, edge computing, industrial AI technology in the information layer; and
- ⑤ process technologies in industries including new energy vehicle, elevator, air conditioner, air compressor, 3C manufacturing, lithium battery, silicon, crane, injection molding machine, textile, metal product, printing, and packaging.

Inovance has been listed into "CCTV Top 10 Socially Responsible Corporate in Top 50 Listed Companies in China" in 2017, "National Enterprise Technology Center" in 2021, "First Batch of Postdoctoral Workstation in Shenzhen", "Top 100 Innovative Enterprise In Jiangsu", "First Batch of Key R&D Projects in Intelligent Robot in China", and "New Energy Vehicle Power Assembly Engineering Center in Jiangsu".



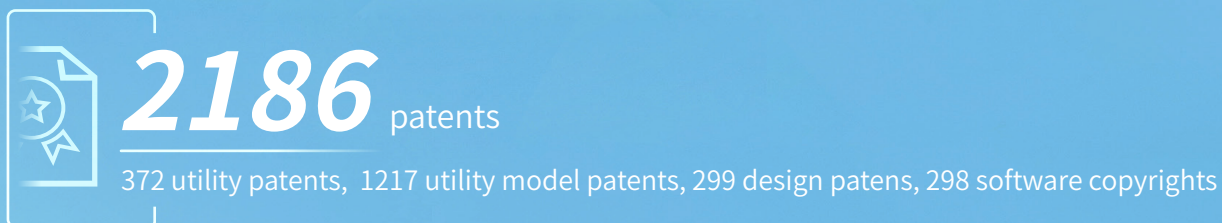
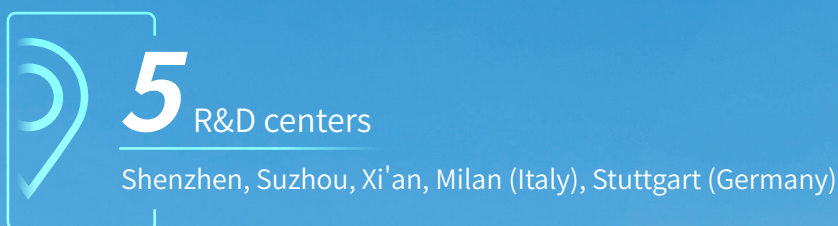
Headquarters in Shenzhen

Headquartered in Shenzhen, with multiple subsidiaries in major cities such as Suzhou and Hongkong

Global R&D team

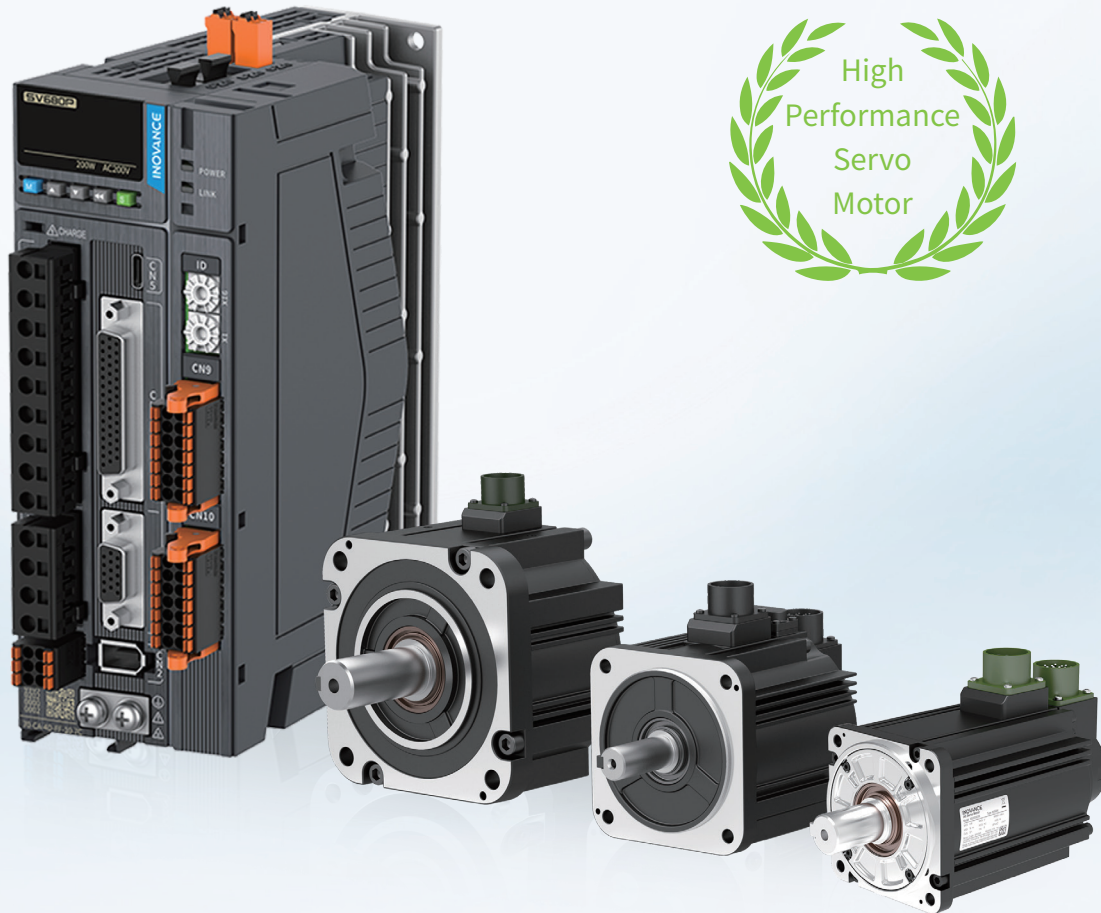
Strong technical strength

- Continuous investment into global R&D platform
- Continuous introduction of industry experts
- Continuous establishment of global alliances covering technologies, materials, basic processes, components, and manufacturing equipment
- Continuous cooperation with top universities



6

Advanced technical design Highlights



○ Small size

Smaller footprint with torque output unchanged, max. reduction of length reaching **29%**

Dimensions of mounting interfaces **Compatible** with MS1-Z series motors

○ Low temperature rise

Optimized electromagnetic circuit to reduce temperature rise
Flange size 60 & 80: Temperature rise reduced by **20K** compared with previous motors

○ Full range of motors

Ultra-low inertia available for motors with flange size 60/80 to better fit applications requiring quick jog control;
220 V models available for motors with flange size 100/130/180;
Regular **26-bit multi-turn absolute encoder** and **functional safety-type** 26-bit multi-turn absolute encoder available for applications requiring high precision

○ High stiffness

Stiffness of typical models **increased by five levels**

○ High energy-saving performance

550 W to 7.5 kW motors compliant with energy efficiency requirements of **GB30253-Class 1**

○ High speed

Max. speed of MS1H1 and MS1H4 motors with flange size 40/60/80 increased from 6000 rpm to **7000 rpm**
Max. speed of MS1H2 motors increased from 5000 rpm to **6000 rpm**
Max. speed of MS1H3 motors (flange size 130/180) increased from 3000 rpm to **4500 rpm**

Note: The preceding speeds are for motors with 23-bit or 26-bit encoders.


MS1-R Naming Rules

MS1 H1- 75B 30C B - A3 3 1 R - *
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① MS1 series servo motor	④ Rated speed (rpm) Comprised of a letter and two digits B: x 10 C: x 100 Example: 30C: 3000 rpm	⑦ Shaft connection mode 3: Solid and keyed, with threaded hole in the shaft center
② Inertia and capacity type H1: Low inertia, small capacity H2: Low inertia, medium capacity H3: Medium inertia, medium capacity H4: Medium inertia, small capacity	⑤ Voltage calss (V) B: 220 D: 380	⑧ Brake, reducer, oil seal ^[1] 0: Without oil seal or brake 1: With oil seal, without brake 2: Without oil seal, with brake 4: With oil seal and brake
③ Rated power (W) Comprised of a letter and two digits B: x 10 C: x 100 Example: 75B: 750 W	⑥ Encoder type Comprised of a letter and a digit A6: 26-bit multi-turn absolute encoder S6: Functional safety-type 26-bit multi-turn absolute encoder A3: 23-bit multi-turn absolute encoder T3: 18-bit multi-turn absolute encoder	⑨ Sub-series No. R: R series
		⑩ Customization information _: Standard type -S: Flying leads type -**: Other customized types

[1]: Motors in flange size 40 are not equipped with an oil seal.

Technical Data

Item	Description
Duty type	S1 (Continuous duty)
Vibration class	V15 ^[1]
Insulation resistance	500 VDC, above 10 MΩ
Ambient temperature	0°C to 40°C (non-frozen) (See the derating curve for temperaturesa above 40°C .)
Ambient humidity	20% to 80% (without condensation)
Storage environment	Observe the following environment requirements for storing a de-energized motor: · Storage temperature: -20° C to +60° C (non-frozen) · Storage humidity: 20% to 80% RH (without condensation)
Excitation mode	Permanent magnet
Installation mode	Flange type
Insulation class	F (155°C)
Insulation voltage	1 min for 1500 VAC (220 V class); 1 min for 1800 VAC (380 V class)
IP rating of enclosure	IP67 (excluding shaft opening and connectors of flying lead type motors)
Ambient humidity	20% to 80%RH (without condensation)
Direction of rotation	Rotating counterclockwise when viewed from the shaft extension side with forward run commands 
Vibration resistance ^[2]	49 m/s ² (Flange face as standard)
Shock resistance ^[3]	490 m/s ² (Flange face as standard); Number of shocks: Two
Altitude	Derating is required only for altitudes above 1000 m.

Note: [1] Vibration level V15 represents the vibration amplitude of the servo motor is lower than 15 μm during operation at rated speed.

[2] The vertical, side-to-side, and front-to-back vibration resistance in three directions when the motor is mounted with the shaft in a horizontal position is given in the above table.

[3] The shock resistance for shock in the vertical direction when the motor is mounted with the shaft in a horizontal position is given in the above table.

[4] Do not operate the system at a fixed frequency because exceeding the allowable vibration value can damage the system.

Technical Data of MS1-R Motors with 26-bit Encoder

MS1H1 motors with low inertia and small capacity (flange size 40/60/80)

Motor Model MS1H1-	05B30CB	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	40	60	60	80	80	80
Rated power (kW)	0.05	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220	220
Rated torque (N·m)	0.16	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	0.56	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	1.5	2.5	3.9	4.4	6.2
Max. current (A)	4.7	4.7	5.8	9.8	15	16.9	24
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	7000	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.15	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.026 (0.028)	0.041 (0.043)	0.094 (0.106)	0.145 (0.157)	0.55 (/)	0.68 (0.071)	0.82 (0.87)
Applicable drive (SV680)	S1R6	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

MS1H2 motors with low inertia and medium capacity (flange size 100)

Motor Model MS1H2-	10C30CB	10C30CD	15C30CB	15C30CD	20C30CB	20C30CD	25C30CB	25C30CD
Flange size (mm)	100	100	100	100	100	100	100	100
Rated power (kW)	1.0	1.0	1.5	1.5	2.0	2.0	2.5	2.5
Rated voltage (V)	220	380	220	380	220	380	220	380
Rated torque (N·m)	3.18	3.18	4.9	4.9	6.36	6.36	7.96	7.96
Max. torque (N·m)	9.54	9.54	14.7	14.7	19.1	19.1	23.9	23.9
Rated current (A)	6.4	3.3	8.6	4.2	11.3	5.6	14.7	7.2
Max. current (A)	23	11	32	14	42	20	53	26
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.54	1.07	0.62	1.28	0.60	1.19	0.60	1.18
Rotor moment of inertia (kg·cm ²)	1.78 (2.6)	1.78 (2.6)	2.35 (3.17)	2.35 (3.17)	2.92 (3.74)	2.92 (3.74)	3.49 (4.3)	3.49 (4.3)
Applicable drive (SV680)	S7R6	T3R5	S012	T5R4	S018	T8R4	S022	T8R4

MS1H2 motors with low inertia and medium capacity (flange size 130)

Motor Model MS1H2-	30C30CB	30C30CD	40C30CB	40C30CD	50C30CB	50C30CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	3.0	3.0	4.0	4.0	5.0	5.0
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	9.8	9.8	12.6	12.6	15.8	15.8
Max. torque (N·m)	24.5	29.4	31.5	37.8	39.5	47.4
Rated current (A)	16.6	8.9	22	13.5	22	17
Max. current (A)	55	29	67.5	42.5	67.5	52.5
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.67	1.25	0.65	1.06	0.81	1.04
Rotor moment of inertia (kg·cm ²)	6.4 (9.38) ^[1]	6.4 (9.38)	9 (11.98)	9 (11.98)	11.6 (14.58)	11.6 (14.58)
Applicable drive (SV680) ^[2]	S022	T012	S027	T017	S027	T021

Note:[1] Values in the parentheses are rotor moment of inertia values for motors with brake.

[2] The motor with 26-bit encoder matches SV680 series servo drives. Drive model description: S-220 V voltage class; T-380 V voltage class; 1R6-Rated output current 1.6 A.; 027-Rated output current 27 A

MS1H3 motors with medium inertia and medium capacity (flange size 130)

Motor Model MS1H3-	85B15CB	85B15CD	13C15CB	13C15CD	18C15CB	18C15CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	0.85	0.85	1.3	1.3	1.8	1.8
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	5.39	5.39	8.34	8.34	11.5	11.5
Max. torque (N·m)	13.5	13.5	20.85	20.85	28.75	28.75
Rated current (A)	6.6	3.5	10.5	5.1	11.9	6.75
Max. current (A)	17.2	8.5	27.3	12.6	32.2	17.7
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	0.93	1.84	0.89	1.85	1.05	1.87
Rotor moment of inertia (kg·cm ²)	13.56 (15.8)	13.56 (15.8)	19.25 (21.5)	19.25 (21.5)	24.9 (27.2)	24.9 (27.2)
Applicable drive (SV680)	S7R6	T3R5	S012	T5R4	S018	T8R4

MS1H3 motors with medium inertia and medium capacity (flange size 180)

Motor Model MS1H3-	29C15CB	29C15CD	44C15CB	44C15CD	55C15CD	75C15CD
Flange size (mm)	180	180	180	180	180	180
Rated power (kW)	2.9	2.9	4.4	4.4	5.5	7.5
Rated voltage (V)	220	380	220	380	380	380
Rated torque (N·m)	18.6	18.6	28.4	28.4	35	48
Max. torque (N·m)	46.5	46.5	71.1	71.1	87.6	119
Rated current (A)	18	10.5	25.5	16	20.7	25
Max. current (A)	52.5	29.75	67	42	52	65
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	1.16	1.94	1.25	1.96	1.92	2.13
Rotor moment of inertia (kg·cm ²)	44.7 (52.35)	44.7 (52.35)	64.9 (72.55)	64.9 (72.55)	86.9 (94.55)	127.5 (135.15)
Applicable drive (SV680)	S022	T012	S027	T017	T021	T026

MS1H4 motors with medium inertia and small capacity (flange size 40/60/80)

Motor Model MS1H4-	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	60	60	80	80	80
Rated power (kW)	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220
Rated torque (N·m)	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	2.4	3.3	4.4	6.5
Max. current (A)	4.7	5.3	9.2	13.2	16.9	24
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.102 (0.104)	0.22 (0.23)	0.43 (0.44)	1.12 (/)	1.46 (1.51)	1.87 (1.97)
Applicable drive (SV680)	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

Technical Data of MS1-R Motors with 23-bit encoder

MS1H1 motors with low inertia and small capacity (flange size 40/60/80)

Motor Model MS1H1-	05B30CB	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	40	60	60	80	80	80
Rated power (kW)	0.05	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220	220
Rated torque (N·m)	0.16	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	0.56	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	1.5	2.5	3.9	4.4	6.2
Max. current (A)	4.7	4.7	5.8	9.8	15	16.9	24
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	7000	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.15	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²) ^[1]	0.026 (0.028)	0.041 (0.043)	0.094 (0.106)	0.145 (0.157)	0.55 (/)	0.68 (0.071)	0.82 (0.87)
Applicable drive (SV670)	S1R6	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6
Applicable drive (SV660)	S1R6	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

MS1H2 motors with low inertia and medium capacity (flange size 100)

Motor Model MS1H2-	10C30CB	10C30CD	15C30CB	15C30CD	20C30CB	20C30CD	25C30CB	25C30CD
Flange size (mm)	100	100	100	100	100	100	100	100
Rated power (kW)	1.0	1.0	1.5	1.5	2.0	2.0	2.5	2.5
Rated voltage (V)	220	380	220	380	220	380	220	380
Rated torque (N·m)	3.18	3.18	4.9	4.9	6.36	6.36	7.96	7.96
Max. torque (N·m)	9.54	9.54	14.7	14.7	19.1	19.1	23.9	23.9
Rated current (A)	6.4	3.3	8.6	4.2	11.3	5.6	14.7	7.2
Max. current (A)	23	11	32	14	42	20	53	26
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.54	1.07	0.62	1.28	0.60	1.19	0.60	1.18
Rotor moment of inertia (kg·cm ²)	1.78 (2.6)	1.78 (2.6)	2.35 (3.17)	2.35 (3.17)	2.92 (3.74)	2.92 (3.74)	3.49 (4.3)	3.49 (4.3)
Applicable drive (SV670)	S7R6	T3R5	S012	T5R4	S012/S018	T8R4	S022	T8R4
Applicable drive (SV660)	S7R6	T3R5	S012	T5R4	S012	T8R4	/	T8R4

MS1H2 motors with low inertia and medium capacity (flange size 130)

Motor Model MS1H2-	30C30CB	30C30CD	40C30CB	40C30CD	50C30CB	50C30CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	3.0	3.0	4.0	4.0	5.0	5.0
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	9.8	9.8	12.6	12.6	15.8	15.8
Max. torque (N·m)	24.5	29.4	31.5	37.8	39.5	47.4
Rated current (A)	16.6	8.9	22	13.5	22	17
Max. current (A)	55	29	67.5	42.5	67.5	52.5
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.67	1.25	0.65	1.06	0.81	1.04
Rotor moment of inertia (kg·cm ²)	6.4 (9.38) ^[1]	6.4 (9.38)	9 (11.98)	9 (11.98)	11.6 (14.58)	11.6 (14.58)
Applicable drive (SV670)	S022	T012	S027	T017	S027	T021
Applicable drive (SV660)	/	T012	/	T017	/	T021

Note: [1] Values in the parentheses are rotor moment of inertia values for motors with brake. The slash symbol "/" represents this drive model is not available.

[2] For MS1-R series motors with flange size 60/80, H1 model is the ultra-low inertia motor applicable to fast point-to-point motion control.

[3] The motor with 23-bit encoder matches SV670 and SV660 series servo drives. Drive model description: S-220 V voltage class; T-380 V voltage class; 1R6-Rated output current 1.6 A...; 027-Rated output current 27 A

MS1H3 motors with medium inertia and medium capacity (flange size 130)

Motor Model MS1H3-	85B15CB	85B15CD	13C15CB	13C15CD	18C15CB	18C15CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	0.85	0.85	1.3	1.3	1.8	1.8
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	5.39	5.39	8.34	8.34	11.5	11.5
Max. torque (N·m)	13.5	13.5	20.85	20.85	28.75	28.75
Rated current (A)	6.6	3.5	10.5	5.1	11.9	6.75
Max. current (A)	17.2	8.5	27.3	12.6	32.2	17.7
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	0.93	1.84	0.89	1.85	1.05	1.87
Rotor moment of inertia (kg·cm ²)	13.56 (15.8)	13.56 (15.8)	19.25 (21.5)	19.25 (21.5)	24.9 (27.2)	24.9 (27.2)
Applicable drive (SV670)	S7R6	T3R5	S012	T5R4	S012	T8R4
Applicable drive (SV660)	S7R6	T3R5	S012	T5R4	S012	T8R4

MS1H3 motors with medium inertia and medium capacity (flange size 180)

Motor Model MS1H3-	29C15CB	29C15CD	44C15CB	44C15CD	55C15CD	75C15CD
Flange size (mm)	180	180	180	180	180	180
Rated power (kW)	2.9	2.9	4.4	4.4	5.5	7.5
Rated voltage (V)	220	380	220	380	380	380
Rated torque (N·m)	18.6	18.6	28.4	28.4	35	48
Max. torque (N·m)	46.5	46.5	71.1	71.1	87.6	119
Rated current (A)	18	10.5	25.5	16	20.7	25
Max. current (A)	52.5	29.75	67	42	52	65
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	1.16	1.94	1.25	1.96	1.92	2.13
Rotor moment of inertia (kg·cm ²)	44.7 (52.35)	44.7 (52.35)	64.9 (72.55)	64.9 (72.55)	86.9 (94.55)	127.5 (135.15)
Applicable drive (SV670)	S022	T012	S027	T017	T021	T026
Applicable drive (SV660)	/	T012	/	T017	T021	T026

MS1H4 motors with medium inertia and small capacity (flange size 40/60/80)

Motor Model MS1H4-	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	60	60	80	80	80
Rated power (kW)	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220
Rated torque (N·m)	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	2.4	3.3	4.4	6.5
Max. current (A)	4.7	5.3	9.2	13.2	16.9	24
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.102 (0.104)	0.22 (0.23)	0.43 (0.44)	1.12 (/)	1.46 (1.51)	1.87 (1.97)
Applicable drive (SV670)	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6
Applicable drive (SV660)	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

Note: [3] MS1-R series H4 models can be used to replace MS1-Z series H1/H4 motor models.

[4] For motors matching IS620 and IS650 series servo drives, see the related selection guide of the drive.

Technical Data of MS1-R Motors with 18-bit encoder

MS1H1 motors with low inertia and small capacity (flang size 40/60/80)

Motor Model MS1H1-	05B30CB	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	40	60	60	80	80	80
Rated power (kW)	0.05	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220	220
Rated torque (N·m)	0.16	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	0.56	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	1.5	2.5	3.9	4.4	6.2
Max. current (A)	4.7	4.7	5.8	9.8	15	16.9	24
Rated speed n_n (rpm)	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.15	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²) ^[1]	0.026 (0.028)	0.041 (0.043)	0.094 (0.106)	0.145 (0.157)	0.55 (/)	0.68 (0.071)	0.82 (0.87)
Applicable drive (SV630)	S1R6	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

MS1H2 motors with low inertia and medium capacity (flang size 100)

Motor Model MS1H2-	10C30CB	10C30CD	15C30CB	15C30CD	20C30CB	20C30CD	25C30CD
Flange size (mm)	100	100	100	100	100	100	100
Rated power (kW)	1.0	1.0	1.5	1.5	2.0	2.0	2.5
Rated voltage (V)	220	380	220	380	220	380	380
Rated torque (N·m)	3.18	3.18	4.9	4.9	6.36	6.36	7.96
Max. torque (N·m)	9.54	9.54	14.7	14.7	19.1	19.1	23.9
Rated current (A)	6.4	3.3	8.6	4.2	11.3	5.6	7.2
Max. current (A)	23	11	32	14	42	20	26
Rated speed n_n (rpm)	3000	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	5000	5000	5000	5000	5000
Torque coefficient (N·m/A)	0.54	1.07	0.62	1.28	0.60	1.19	1.18
Rotor moment of inertia (kg·cm ²)	1.78 (2.6)	1.78 (2.6)	2.35 (3.17)	2.35 (3.17)	2.92 (3.74)	2.92 (3.74)	3.49 (4.3)
Applicable drive (SV630)	S7R6	T3R5	S012	T5R4	S012	T8R4	T8R4

MS1H2 motors with low inertia and medium capacity (flang size 130)

Motor Model MS1H2-	30C30CD	40C30CD	50C30CD
Flange size (mm)	130	130	130
Rated power (kW)	3.0	4.0	5.0
Rated voltage (V)	380	380	380
Rated torque (N·m)	9.8	12.6	15.8
Max. torque (N·m)	29.4	37.8	47.4
Rated current (A)	8.9	13.5	17
Max. current (A)	29	42.5	52.5
Rated speed n_n (rpm)	3000	3000	3000
Max. speed n_{max} (rpm)	5000	5000	5000
Torque coefficient (N·m/A)	1.25	1.06	1.04
Rotor moment of inertia (kg·cm ²)	6.4 (9.38) ^[1]	9 (11.98)	11.6 (14.58)
Applicable drive (SV630)	T012	T017	T021

Note: [1] Values in the parentheses are rotor moment of inertia values for motors with brake. The slash symbol "/" represents this drive model is not available.

[2] For MS1-R series motors with flange size 60/80, H1 model is the ultra-low inertia motor applicable to fast point-to-point motion control.

[3] The motor with 18-bit encoder matches SV630 series servo drives. Drive model description: S-220 V voltage class; T-380 V voltage class; 1R6-Rated output current 1.6 A...; 027-Rated output current 27 A

MS1H3 motors with medium inertia and medium capacity (flang size 130)

Motor Model MS1H3-	85B15CB	85B15CD	13C15CB	13C15CD	18C15CB	18C15CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	0.85	0.85	1.3	1.3	1.8	1.8
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	5.39	5.39	8.34	8.34	11.5	11.5
Max. torque (N·m)	13.5	13.5	20.85	20.85	28.75	28.75
Rated current (A)	6.6	3.5	10.5	5.1	11.9	6.75
Max. current (A)	17.2	8.5	27.3	12.6	32.2	17.7
Rated speed n_n (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	3000	3000	3000	3000	3000	3000
Torque coefficient (N·m/A)	0.67	1.25	0.65	1.06	0.81	1.04
Rotor moment of inertia (kgcm ²)	13.56 (15.8)	13.56 (15.8)	19.25 (21.5)	19.25 (21.5)	24.9 (27.2)	24.9 (27.2)
Applicable drive (SV630)	S7R6	T3R5	S012	T5R4	S018	T8R4

MS1H3 motors with medium inertia and medium capacity (flang size 180)

Motor Model MS1H3-	29C15CD	44C15CD	55C15CD	75C15CD
Flange size (mm)	180	180	180	180
Rated power (kW)	2.9	4.4	5.5	7.5
Rated voltage (V)	380	380	380	380
Rated torque (N·m)	18.6	28.4	35	48
Max. torque (N·m)	46.5	71.1	87.6	119
Rated current (A)	10.5	16	20.7	25
Max. current (A)	29.75	42	52	65
Rated speed n_n (rpm)	1500	1500	1500	1500
Max. speed n_{max} (rpm)	3000	3000	3000	3000
Torque coefficient (N·m/A)	1.84	1.85	1.05	1.87
Rotor moment of inertia (kgcm ²)	44.7 (52.35)	64.9 (72.55)	86.9 (94.55)	127.5 (135.15)
Applicable drive (SV630)	T012	T017	T021	T026

MS1H4 motors with medium inertia and small capacity (flang size 40/60/80)

Motor Model MS1H4-	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	60	60	80	80	80
Rated power (kW)	0.1	0.2	0.4	0.55	0.75	1.0
Rated voltage (V)	220	220	220	220	220	220
Rated torque (N·m)	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	2.4	3.3	4.4	6.5
Max. current (A)	4.7	5.3	9.2	13.2	16.9	24
Rated speed n_n (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.102 (0.104)	0.22 (0.23)	0.43 (0.44)	1.12 (/)	1.46 (1.51)	1.87 (1.97)
Applicable drive (SV630)	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

Note: [3] MS1-R series H4 models can be used to replace MS1-Z series H1/H4 motor models.

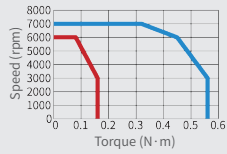
[4] For motors matching IS620 and IS650 series servo drives, see the related selection guide of the drive.

Torque-Speed Characteristics of MS1-R Motors with 26-bit Encoders

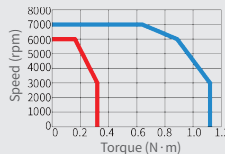
MS1H1
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone

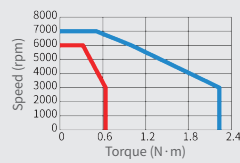
MS1H1-05B30CB- □ 63 □ Z



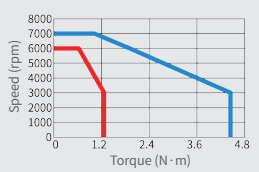
MS1H1-10B30CB- □ 63 □ Z



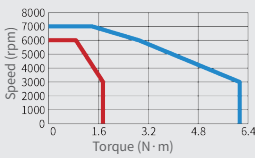
MS1H1-20B30CB- □ 63 □ R



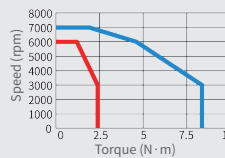
MS1H1-40B30CB- □ 63 □ R



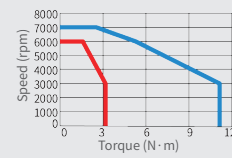
MS1H1-55B30CB- □ 63 □ R



MS1H1-75B30CB- □ 63 □ R



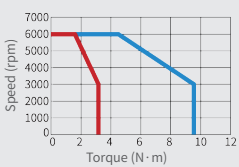
MS1H1-10C30CB- □ 63 □ R



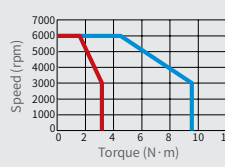
MS1H2
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone

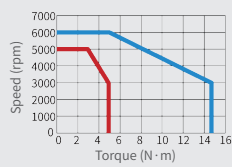
MS1H2-10C30CB- □ 63 □ R



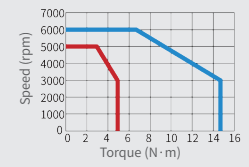
MS1H2-10C30CD- □ 63 □ R



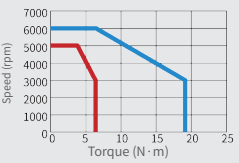
MS1H2-15C30CB- □ 63 □ R



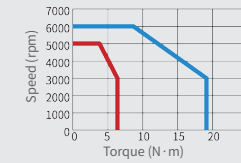
MS1H2-15C30CD- □ 63 □ R



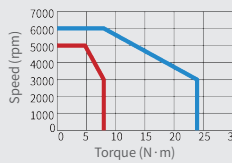
MS1H2-20C30CB- □ 63 □ R



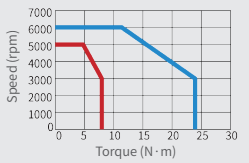
MS1H2-20C30CD- □ 63 □ R



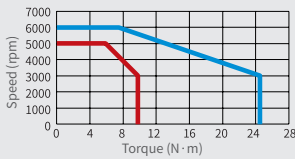
MS1H2-25C30CB- □ 63 □ R



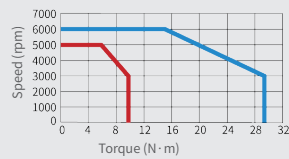
MS1H2-25C30CD- □ 63 □ R



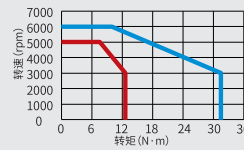
MS1H2-30C30CB- □ 63 □ R



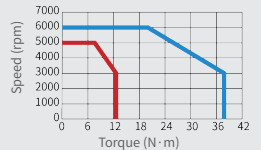
MS1H2-30C30CD- □ 63 □ R



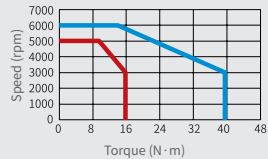
MS1H2-40C30CB- □ 63 □ R



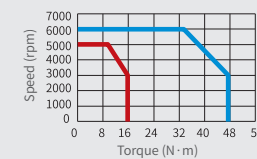
MS1H2-40C30CD- □ 63 □ R



MS1H2-50C30CB- □ 63 □ R

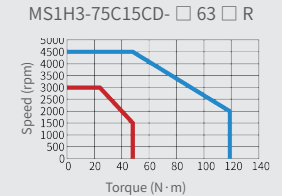
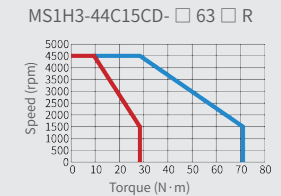
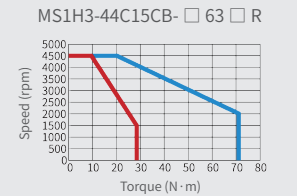
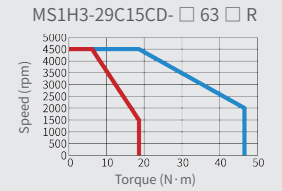
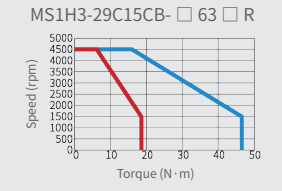
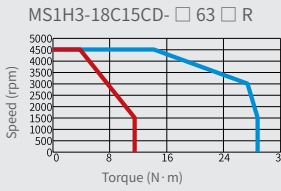
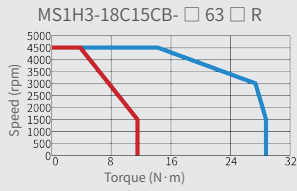
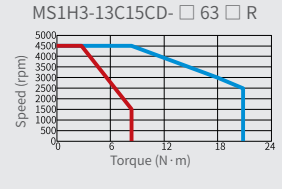
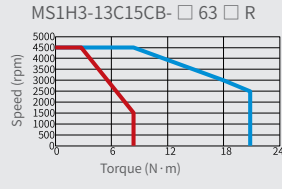
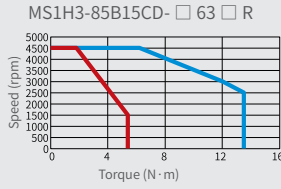
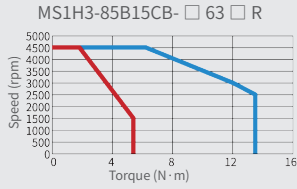


MS1H2-50C30CD- □ 63 □ R



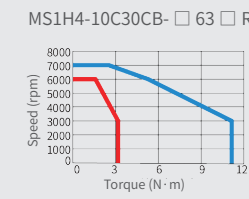
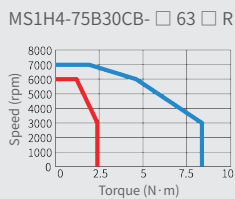
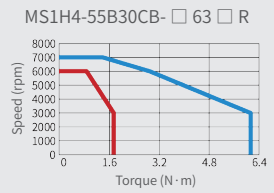
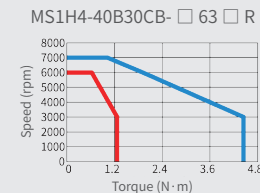
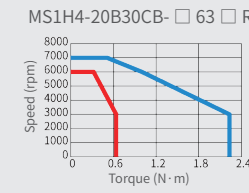
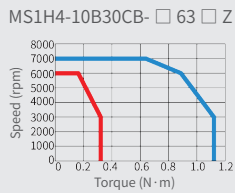
MS1H3
medium inertia,
medium capacity

— A Continuous duty zone
— B Intermittent duty zone



MS1H4
medium inertia,
small capacity

— A Continuous duty zone
— B Intermittent duty zone

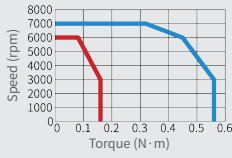


Torque-Speed Characteristics of MS1-R Motors with 23-bit Encoders

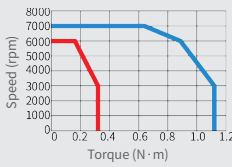
MS1H1
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone

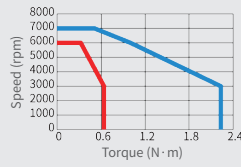
MS1H1-05B30CB-A33 □ R



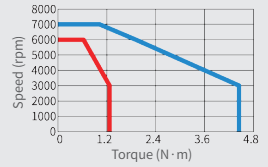
MS1H1-10B30CB-A33 □ R



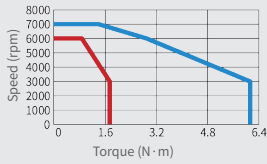
MS1H1-20B30CB-A33 □ R



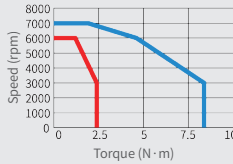
MS1H1-40B30CB-A33 □ R



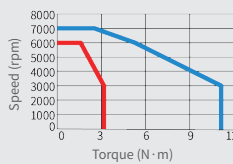
MS1H1-55B30CB-A33 □ R



MS1H1-75B30CB-A33 □ R



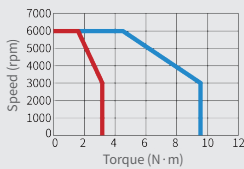
MS1H1-10C30CB-A33 □ R



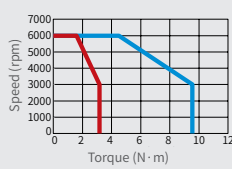
MS1H2
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone

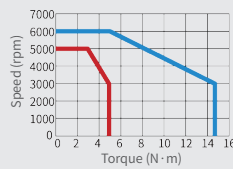
MS1H2-10C30CB-A33 □ R



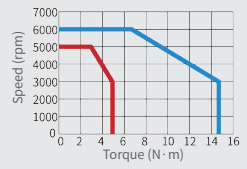
MS1H2-10C30CD-A33 □ R



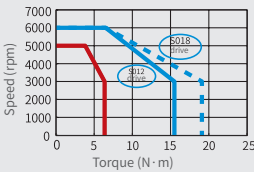
MS1H2-15C30CB-A33 □ R



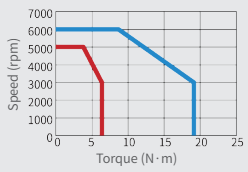
MS1H2-15C30CD-A33 □ R



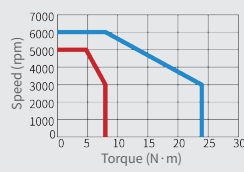
MS1H2-20C30CB-A33 □ R



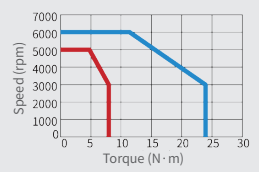
MS1H2-20C30CD-A33 □ R



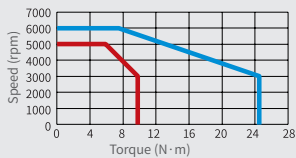
MS1H2-25C30CB-A33 □ R



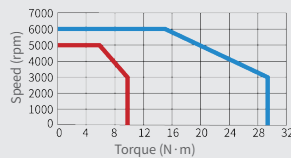
MS1H2-25C30CD-A33 □ R



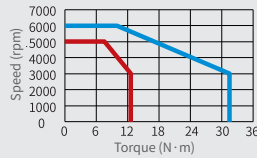
MS1H2-30C30CB-A33 □ R



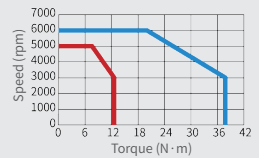
MS1H2-30C30CD-A33 □ R



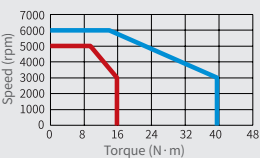
MS1H2-40C30CB-A33 □ R



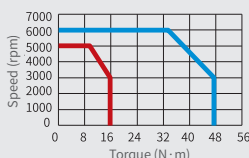
MS1H2-40C30CD-A33 □ R



MS1H2-50C30CB-A33 □ R



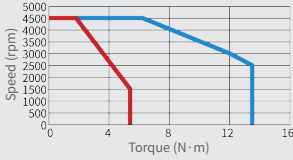
MS1H2-50C30CD-A33 □ R



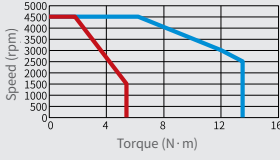
MS1H3
medium inertia,
medium capacity

— A Continuous duty zone
— B Intermittent duty zone

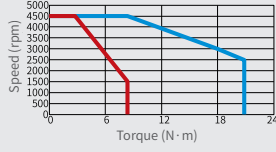
MS1H3-85B15CB-A33 □ R



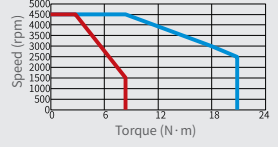
MS1H3-85B15CD-A33 □ R



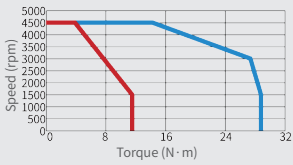
MS1H3-13C15CB-A33 □ R



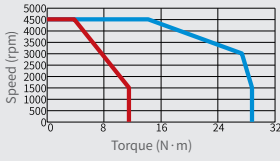
MS1H3-13C15CD-A33 □ R



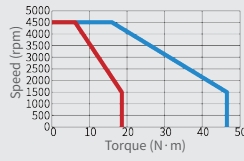
MS1H3-18C15CB-A33 □ R



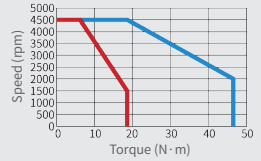
MS1H3-18C15CD-A33 □ R



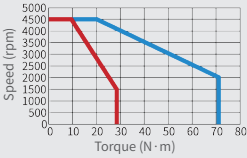
MS1H3-29C15CB-A33 □ R



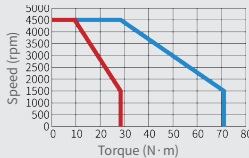
MS1H3-29C15CD-A33 □ R



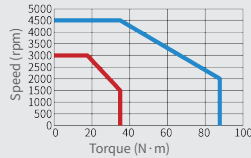
MS1H3-44C15CB-A33 □ R



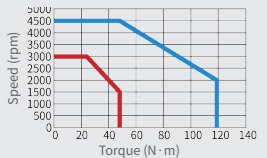
MS1H3-44C15CD-A33 □ R



MS1H3-55C15CD-A33 □ R



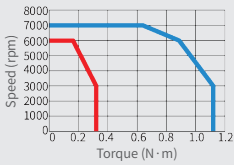
MS1H3-75C15CD-A33 □ R



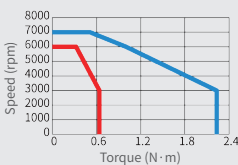
MS1H4
medium inertia,
small capacity

— A Continuous duty zone
— B Intermittent duty zone

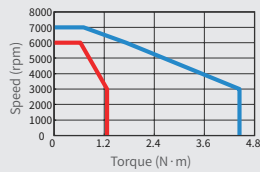
MS1H4-10B30CB-A33 □ R



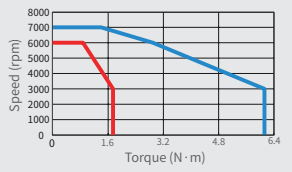
MS1H4-20B30CB-A33 □ R



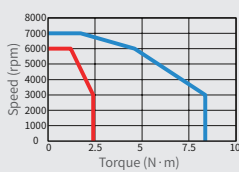
MS1H4-40B30CB-A33 □ R



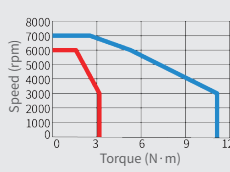
MS1H4-55B30CB-A33 □ R



MS1H4-75B30CB-A33 □ R



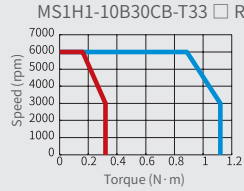
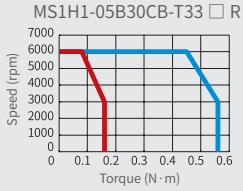
MS1H4-10C30CB-A33 □ R



Torque-Speed Characteristics of MS1-R Motors with 18-bit Encoders

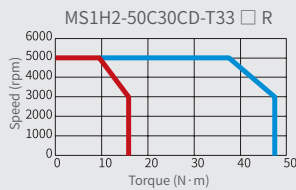
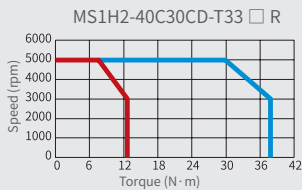
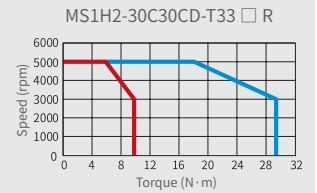
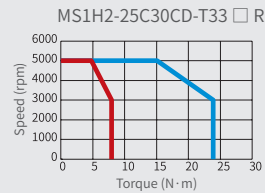
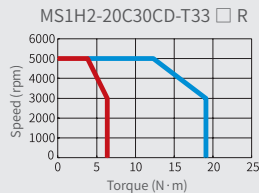
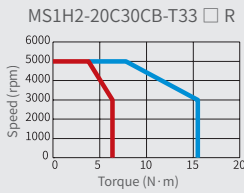
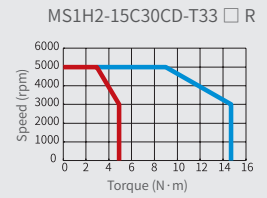
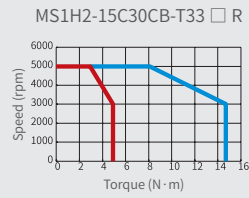
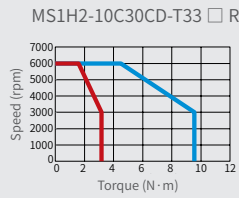
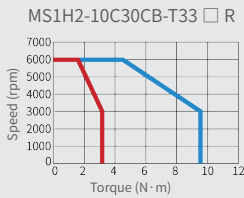
MS1H1
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone



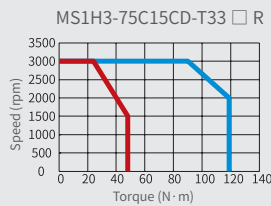
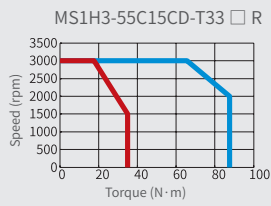
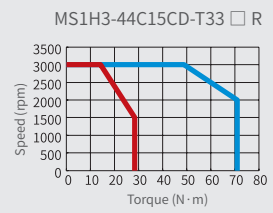
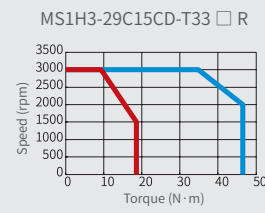
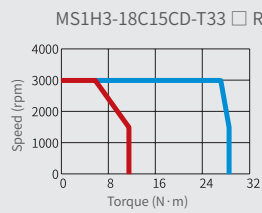
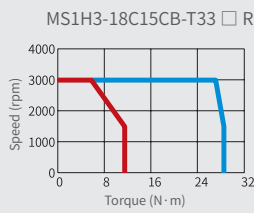
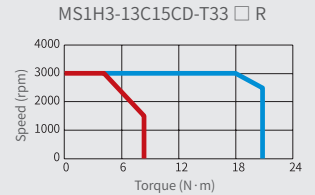
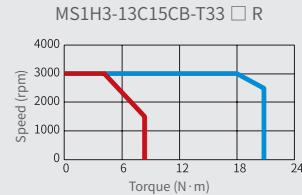
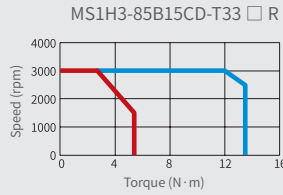
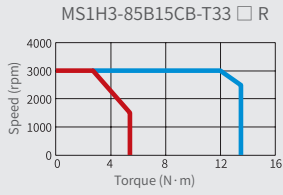
MS1H2
low
inertia,
small
capacity

— A Continuous duty zone
— B Intermittent duty zone



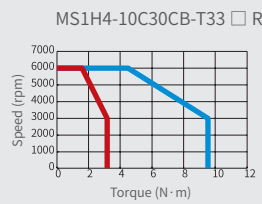
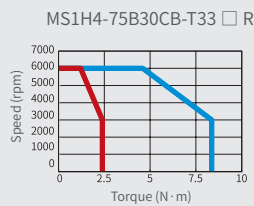
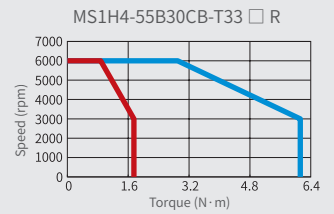
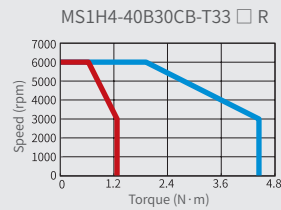
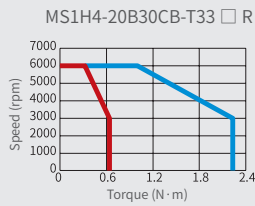
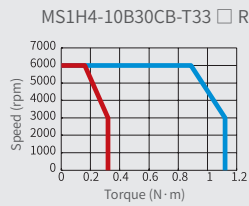
MS1H3
medium inertia,
medium capacity

— A Continuous duty zone
— B Intermittent duty zone



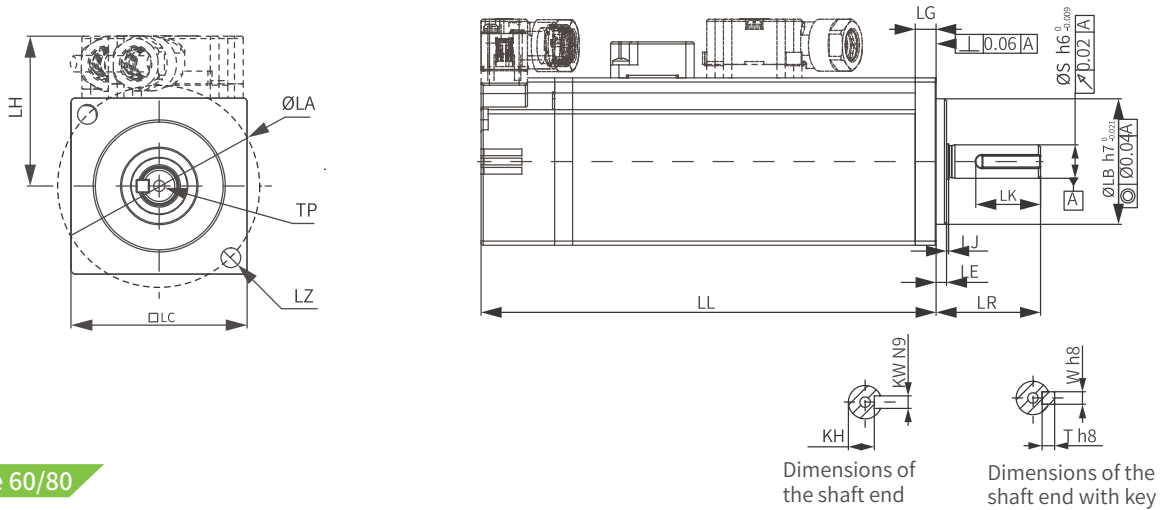
MS1H4
medium inertia,
small capacity

— A Continuous duty zone
— B Intermittent duty zone

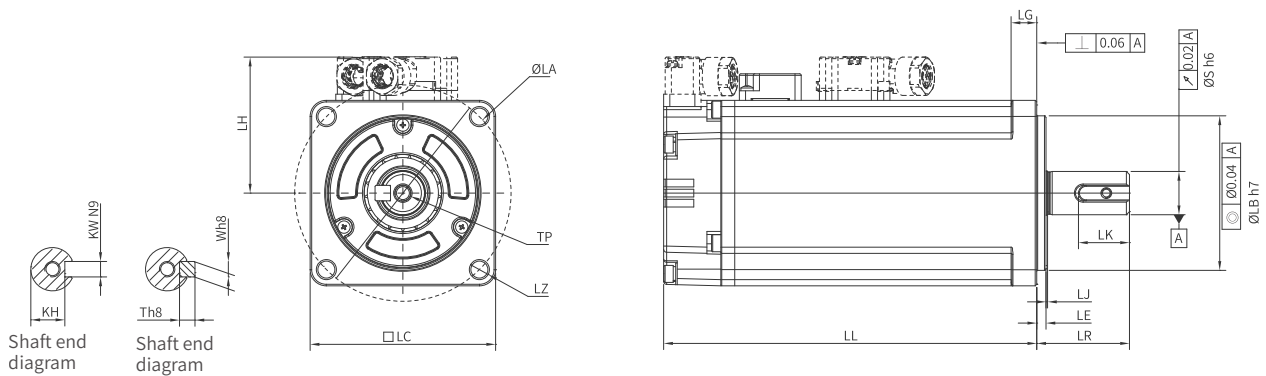


Dimensions of MS1-R Series H1/H4 Motors

Flange size 40



Flange size 60/80



Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	LH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)
Flange size 40	MS1H1-05B30CB-□□3□Z	40	65.4 (96)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ^{-0.021}
	MS1H1-10B30CB-□□3□Z	40	78.4 (110)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ^{-0.021}
	MS1H4-10B30CB-□□3□Z	40	91 (121.5)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ^{-0.021}

Motor Model		S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 40	MS1H1-05B30CB-□□3□Z	8	M3×6	15.5	6.2 ^{-0.1}	3	3	3	0.39 (0.50)
	MS1H1-10B30CB-□□3□Z	8	M3×6	15.5	6.2 ^{-0.1}	3	3	3	0.45 (0.64)
	MS1H4-10B30CB-□□3□Z	8	M3×6	15.5	6.2 ^{-0.1}	3	3	3	0.45 (0.64)

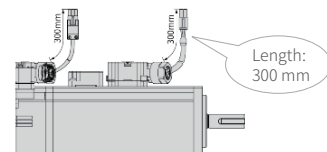
Note: [3] MS1-R series motors with flange size 40 is upcoming.

Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	LH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)
Flange size 60/80	MS1H1-20B30CB- □□ 3 □ R	60	75.5 (103)	30±0.5	70	4 – Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
	MS1H1-40B30CB- □□ 3 □ R	60	93 (121)	30±0.5	70	4 – Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.021}
	MS1H1-55B30CB- □□ 3 □ R	80	96.7 (/)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H1-75B30CB- □□ 3 □ R	80	107.3 (141.5)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H1-10C30CB- □□ 3 □ R	80	119.2 (153.4)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H4-20B30CB- □□ 3 □ R	60	73.5 (101.1)	30±0.5	70	4 – Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
	MS1H4-40B30CB- □□ 3 □ R	60	92 (119.8)	30±0.5	70	4 – Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.021}
	MS1H4-55B30CB- □□ 3 □ R	80	96.7 (/)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H4-75B30CB- □□ 3 □ R	80	107.3 (140.5)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H4-10C30CB- □□ 3 □ R	80	118.7 (153.2)	35±0.5	90	4 – Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}

Motor Model		S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 60/80	MS1H1-20B30CB- □□ 3 □ R	14	M5×8	16.5	110-0.1	5	5	5	0.80 (1.17)
	MS1H1-40B30CB- □□ 3 □ R	14	M5×8	16.5	110-0.1	5	5	5	1.11 (1.48)
	MS1H1-55B30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	1.88 (/)
	MS1H1-75B30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	2.22 (2.88)
	MS1H1-10C30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	2.61 (3.27)
	MS1H4-20B30CB- □□ 3 □ R	14	M5×8	16.5	110-0.1	5	5	5	0.78 (1.16)
	MS1H4-40B30CB- □□ 3 □ R	14	M5×8	16.5	110-0.1	5	5	5	1.11 (1.48)
	MS1H4-55B30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	1.85 (/)
	MS1H4-75B30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	2.18 (2.82)
	MS1H4-10C30CB- □□ 3 □ R	19	M6×20	26	15.50-0.1	6	6	6	2.55 (2.9)

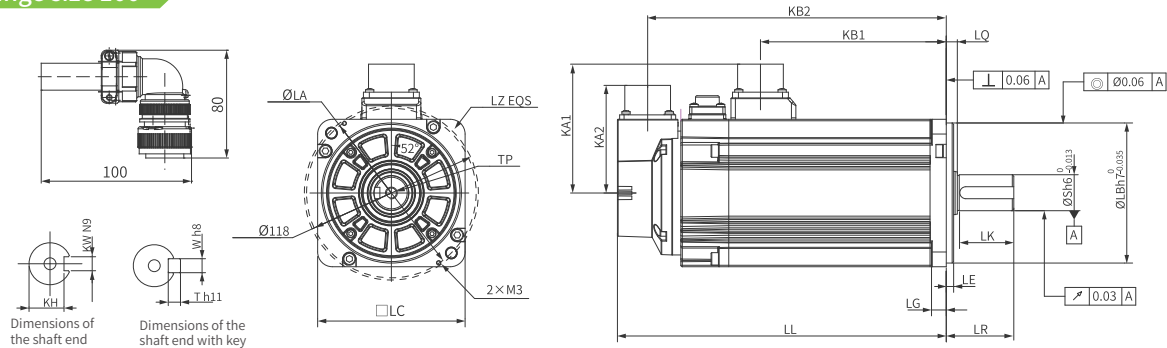
Note : [1] Values in the parentheses are for the motor with brake.

[2] Models ended with -S represent motors with flying leads. These motors carry flying leads of about 300 mm, as shown on the right.

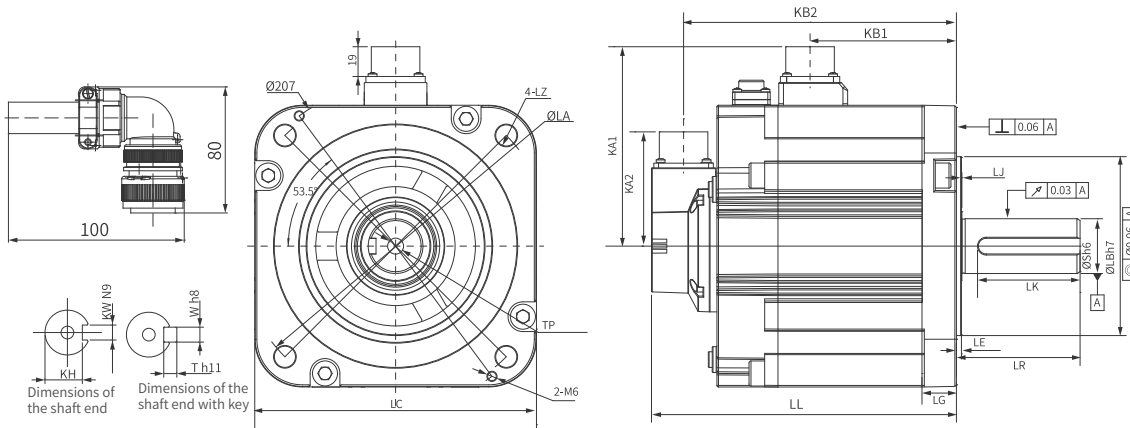


Dimensions of MS1-R Series H2/H3 Motors

Flange size 100



Flange size 130/180



Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
Flange size 100	MS1H2-10C30CB-□□3□R	100	144	45±1	115	4 - Ø7	88	75	73	123.5	10	5±0.3
	MS1H2-10C30CD-□□3□R		(172)									
	MS1H2-15C30CB-□□3□R	100	161	45±1	115	4 - Ø7	88	92	73	140.5	10	5±0.3
	MS1H2-15C30CD-□□3□R		(189)									
	MS1H2-20C30CB-□□3□R	100	177	45±1	115	4 - Ø7	88	108	73	156.5	10	5±0.3
	MS1H2-20C30CD-□□3□R		(205)									
	MS1H2-25C30CB-□□3□R	100	195	45±1	115	4 - Ø7	88	126	73	174.5	10	5±0.3
	MS1H2-25C30CD-□□3□R		(223)									

Motor Model		LQ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 100	MS1H2-10C30CB-□□3□R	7.5±0.75	Ø95h7 _{-0.035}	24	M8×16	36	20 _{0.2}	8	8	7	3.85
	MS1H2-10C30CD-□□3□R										
	MS1H2-15C30CB-□□3□R	7.5±0.75	Ø95h7 _{-0.035}	24	M8×16	36	20 _{0.2}	8	8	7	4.65
	MS1H2-15C30CD-□□3□R										
	MS1H2-20C30CB-□□3□R	7.5±0.75	Ø95h7 _{-0.035}	24	M8×16	36	20 _{0.2}	8	8	7	5.5
	MS1H2-20C30CD-□□3□R										
	MS1H2-25C30CB-□□3□R	7.5±0.75	Ø95h7 _{-0.035}	24	M8×16	36	20 _{0.2}	8	8	7	6.3
	MS1H2-25C30CD-□□3□R										

Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
Flange size 130	MS1H2-30C30CB- □□ 3 □ R MS1H2-30C30CD- □□ 3 □ R	130	198 (223)	63±1	145	4 – Ø9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
	MS1H2-40C30CB- □□ 3 □ R MS1H2-40C30CD- □□ 3 □ R	130	236 (261)	63±1	145	4 – Ø9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
	MS1H2-50C30CB- □□ 3 □ R MS1H2-50C30CD- □□ 3 □ R	130	274 (299)	63±1	145	4 – Ø9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
	MS1H3-85B15CB- □□ 3 □ R MS1H3-85B15CD- □□ 3 □ R	130	142 (167)	55±1	145	4 – Ø9	103	70	73	121.5 (146.5)	14	4
	MS1H3-13C15CB- □□ 3 □ R MS1H3-13C15CD- □□ 3 □ R	130	157 (182)	55±1	145	4 – Ø9	103	85	73	136.5 (161.5)	14	4
	MS1H3-18C15CB- □□ 3 □ R MS1H3-18C15CD- □□ 3 □ R	130	172 (197)	55±1	145	4 – Ø9	103	100	73	151.5 (176.5)	14	4

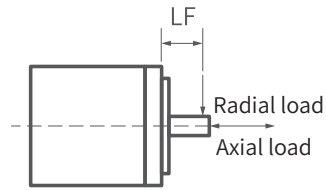
Motor Model		LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 130	MS1H2-30C30CB- □□ 3 □ R MS1H2-30C30CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	28	M8×20	54	24 _{-0.2}	8	8	7	10.0 (11.9)
	MS1H2-40C30CB- □□ 3 □ R MS1H2-40C30CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	28	M8×20	54	24 _{-0.2}	8	8	7	13.2 (15.1)
	MS1H2-50C30CB- □□ 3 □ R MS1H2-50C30CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	28	M8×20	54	24 _{-0.2}	8	8	7	16.5 (18.25)
	MS1H3-85B15CB- □□ 3 □ R MS1H3-85B15CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	22	M6×20	36	18 _{-0.2}	8	8	7	5.8 (7.7)
	MS1H3-13C15CB- □□ 3 □ R MS1H3-13C15CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	22	M6×20	36	18 _{-0.2}	8	8	7	7.1 (8.9)
	MS1H3-18C15CB- □□ 3 □ R MS1H3-18C15CD- □□ 3 □ R	0.5±0.75	Ø110h7 _{-0.035}	22	M6×20	36	18 _{-0.2}	8	8	7	8.5 (10.3)

Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
Flange size 180	MS1H3-29C15CB- □□ 3 □ R MS1H3-29C15CD- □□ 3 □ R	180	161 (194.8)	79±1	200	4 – Ø13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
	MS1H3-44C15CB- □□ 3 □ R	180	184.5 (218.3)	79±1	200	4 – Ø13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
	MS1H3-44C15CD- □□ 3 □ R	180	184.5 (218.3)	79±1	200	4 – Ø13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
	MS1H3-55C15CD- □□ 3 □ R	180	208 (241.8)	113±1	200	4 – Ø13.5	127.4	140.5	73	187.5 (221.3)	22	3.2±0.3
	MS1H3-75C15CD- □□ 3 □ R	180	255 (288.8)	113±1	200	4 – Ø13.5	127.4	187.5	73	234.5 (234.5)	22	3.2±0.3

Motor Model		LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 180	MS1H3-29C15CB- □□ 3 □ R MS1H3-29C15CD- □□ 3 □ R	0.5±0.75	Ø114.3h7 _{-0.035}	35	M12×25	65	30 _{-0.2}	10	10	8	13.8 (17.9)
	MS1H3-44C15CB- □□ 3 □ R	0.5±0.75	Ø114.3h7 _{-0.035}	35	M12×25	65	30 _{-0.2}	10	10	8	17.4 (21.9)
	MS1H3-44C15CD- □□ 3 □ R	0.5±0.75	Ø114.3h7 _{-0.035}	35	M12×25	65	37 _{-0.2}	10	10	8	17.4 (21.6)
	MS1H3-55C15CD- □□ 3 □ R	0.5±0.75	Ø114.3h7 _{-0.035}	42	M16×32	97	37 _{-0.2}	12	12	8	21.7 (25.9)
	MS1H3-75C15CD- □□ 3 □ R	0.5±0.75	Ø114.3h7 _{-0.035}	42	M16×32	97	37 _{-0.2}	12	12	8	29 (33.2)

Note : [1] Values in the parentheses are for the motor with brake.

Axial/Radial Allowable Load



Motor Model	Flange Size (mm)	LF (mm)	Allowable Radial Load (N)	Allowable Axial Load (N)
MS1H1-05B30CB- □□ 3 □ Z MS1H1-10B30CB- □□ 3 □ Z MS1H4-10B30CB- □□ 3 □ Z	40	20	78	54
MS1H1-20B30CB- □□ 3 □ R MS1H1-40B30CB- □□ 3 □ R MS1H4-20B30CB- □□ 3 □ R MS1H4-40B30CB- □□ 3 □ R	60	25	245	74
MS1H1-55B30CB- □□ 3 □ R MS1H1-75B30CB- □□ 3 □ R MS1H1-10C30CB- □□ 3 □ R MS1H4-55B30CB- □□ 3 □ R MS1H4-75B30CB- □□ 3 □ R MS1H4-10C30CB- □□ 3 □ R	80	35	392	147
MS1H2-10C30CB- □□ 3 □ R MS1H2-10C30CD- □□ 3 □ R MS1H2-15C30CB- □□ 3 □ R MS1H2-15C30CD- □□ 3 □ R MS1H2-20C30CB- □□ 3 □ R MS1H2-20C30CD- □□ 3 □ R MS1H2-25C30CB- □□ 3 □ R MS1H2-25C30CD- □□ 3 □ R	100	45	686	196
MS1H2-30C30CB- □□ 3 □ R MS1H2-30C30CD- □□ 3 □ R MS1H2-40C30CB- □□ 3 □ R MS1H2-40C30CD- □□ 3 □ R MS1H2-50C30CB- □□ 3 □ R MS1H2-50C30CD- □□ 3 □ R	130	63	1176	392
MS1H3-85B15CB- □□ 3 □ R MS1H3-85B15CD- □□ 3 □ R MS1H3-13C15CB- □□ 3 □ R MS1H3-13C15CD- □□ 3 □ R MS1H3-18C15CB- □□ 3 □ R MS1H3-18C15CD- □□ 3 □ R	130	55	686	196
MS1H3-29C15CB- □□ 3 □ R MS1H3-29C15CD- □□ 3 □ R MS1H3-44C15CB- □□ 3 □ R MS1H3-44C15CD- □□ 3 □ R	180	79	1470	490
MS1H3-55C15CD- □□ 3 □ R MS1H3-75C15CD- □□ 3 □ R	180	113	1764	588

Technical Data for the Motor with Brake

Motor Model	Holding Torque (N·m)	Supply Voltage (V DC) $\pm 10\%$	Rated Power (W)	Coil Resistance (Ω) $\pm 7\%$	Exciting Current (A)	Release Time (ms)	Apply Time (ms)	Backlash ($^{\circ}$)
MS1H1-05B/10B MS1H4-10B	0.32	24	6.1	94.4	0.25	≤ 20	≤ 40	≤ 1.5
MS1H1/4-20B/40B	1.5	24	7.6	75.79	0.32	≤ 20	≤ 60	≤ 1.5
MS1H1/4-75B/10C	3.2	24	10	57.6	0.42	≤ 40	≤ 60	≤ 1
MS1H2-10C/15C/20C/25C	8	24	17.6	32.73	0.73	≤ 40	≤ 100	≤ 1
MS1H2-30C/40C/50C	16	24	24	24	1	≤ 60	≤ 120	≤ 1
MS1H3-85B/13C/18C	16	24	24	24	1	≤ 60	≤ 120	≤ 1
MS1H3-29C/44C/55C/75C	50	24	31	18.58	1.29	≤ 100	≤ 200	≤ 1

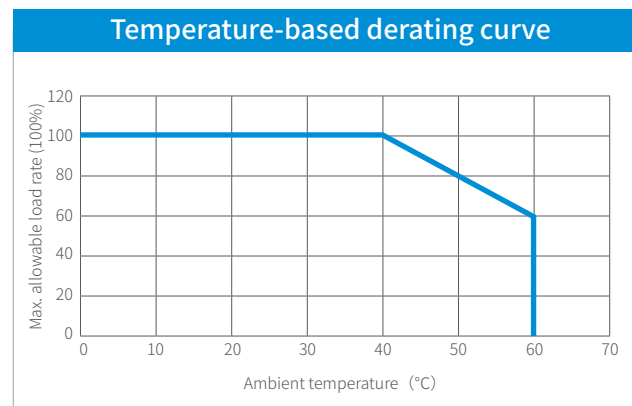
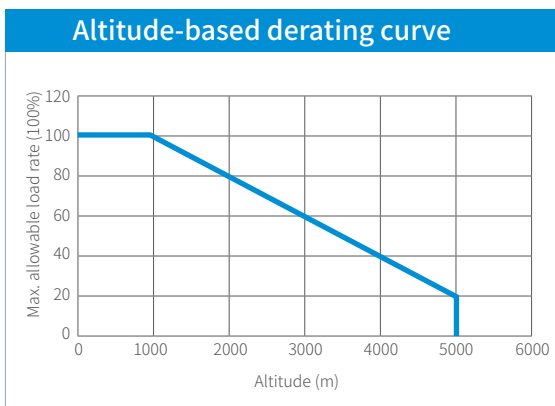
Note:

[1] The holding brake cannot be used for braking purpose.

[2] The brake release time and apply time vary with the discharging circuit. Check the actual action delay of the product during use.

[3] 24 VDC power supplies need to be prepared by users.

Derating Characteristics



Applicable Cable Selection

Power cable

Motor Model	Cable Name		Cable Model	Cable Length (mm)	Dimension Drawing	
MS1H1/ MS1H4 terminal-type motor	Front outlet	Without brake	S6-L-M107-3.0	3000		
			S6-L-M107-5.0	5000		
			S6-L-M107-10.0	10000		
		With brake	S6-L-B107-3.0	3000		
			S6-L-B107-5.0	5000		
			S6-L-B107-10.0	10000		
	Rear outlet	Without brake	S6-L-M108-3.0	3000		
			S6-L-M108-5.0	5000		
			S6-L-M108-10.0	10000		
		With brake	S6-L-B108-3.0	3000		
			S6-L-B108-5.0	5000		
			S6-L-B108-10.0	10000		
MS1H1/ MS1H4 flying leads type motor (-S)	Without brake	S6-L-M100-3.0	3000			
		S6-L-M100-5.0	5000			
		S6-L-M100-10.0	10000			
	With brake	S6-L-B100-3.0	3000			
		S6-L-B100-5.0	5000			
		S6-L-B100-10.0	10000			
MS1H2 motors of 3 kW and below/MS1H3 motors of 1.8 kW and below	Without brake	S6-L-M111-3.0	3000			
		S6-L-M111-5.0	5000			
		S6-L-M111-10.0	10000			
	With brake	S6-L-B111-3.0	3000			
		S6-L-B111-5.0	5000			
		S6-L-B111-10.0	10000			

Applicable Cable Selection

Power cable

Motor Model	Cable Name	Cable Model	Cable Length (mm)	Dimension Drawing
MS1H2 motors of 4 kW/5 kW	Without brake	S6-L-M011-3.0	3000	
		S6-L-M011-5.0	5000	
		S6-L-M011-10.0	10000	
	With brake	S6-L-B011-3.0	3000	
		S6-L-B011-5.0	5000	
		S6-L-B011-10.0	10000	
MS1H3 motors of 2.9 kW	Without brake	S6-L-M112-3.0	3000	
		S6-L-M112-5.0	5000	
		S6-L-M112-10.0	10000	
	With brake	S6-L-B112-3.0	3000	
		S6-L-B112-5.0	5000	
		S6-L-B112-10.0	10000	
MS1H3 motors of 4.4 kW and above	Without brake	S6-L-M022-3.0	3000	
		S6-L-M022-5.0	5000	
		S6-L-M022-10.0	10000	
	With brake	S6-L-B022-3.0	3000	
		S6-L-B022-5.0	5000	
		S6-L-B022-10.0	10000	

Note: [1] MS1-R series motors share the same cables as MS1-Z series motors.

[2] For more information on cables, see section Cable Specifications and Models in the hardware guide of the servo drive.

Applicable Cable Selection

Encoder cable

Motor Model	Cable Name	Cable Model	Cable Length (mm)	Dimension Drawing	
MS1H1/ MS1H4 terminal-type motors	Front outlet	Single-turn absolute encoder	S6-L-P114-3.0	3000	
		S6-L-P114-5.0	5000		
		S6-L-P114-10.0	10000		
	Multi-turn absolute encoder	S6-L-P124-3.0	3000		
		S6-L-P124-5.0	5000		
		S6-L-P124-10.0	10000		
	Rear outlet	Single-turn absolute encoder	S6-L-P115-3.0	3000	
		S6-L-P115-5.0	5000		
		S6-L-P115-10.0	10000		
Multi-turn absolute encoder	S6-L-P125-3.0	3000			
	S6-L-P125-5.0	5000			
	S6-L-P125-10.0	10000			
MS1H1/ MS1H4 flying leads type motors (-S)	Single-turn absolute encoder	S6-L-P110-3.0	3000		
		S6-L-P110-5.0	5000		
		S6-L-P110-10.0	10000		
	Multi-turn absolute encoder	S6-L-P120-3.0	3000		
		S6-L-P120-5.0	5000		
		S6-L-P120-10.0	10000		
MS1H2/ MS1H3 motors	Multi-turn absolute encoder	S6-L-P111-3.0	3000		
		S6-L-P111-5.0	5000		
		S6-L-P111-10.0	10000		
	Multi-turn absolute encoder	S6-L-P121-3.0	3000		
		S6-L-P121-5.0	5000		
		S6-L-P121-10.0	10000		

Note: [1] MS1-R series motors share the same cables as MS1-Z series motors.

[2] For more information on cables, see section Cable Specifications and Models in the hardware guide of the servo drive.

NOTES

A series of horizontal dotted lines for writing notes.

REMARKS

A large empty rectangular box for writing remarks.