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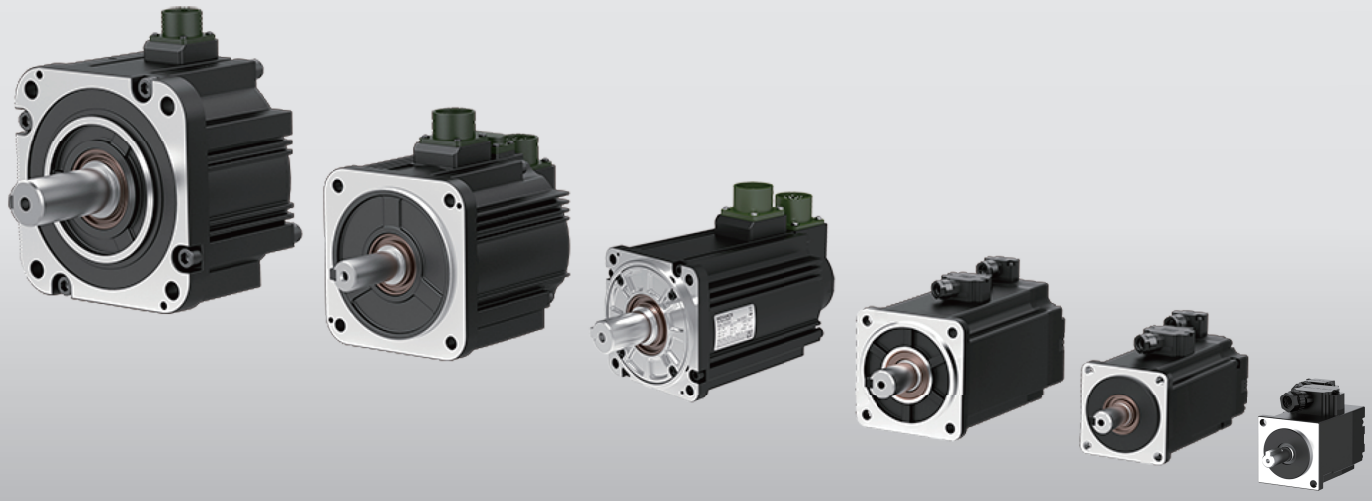

MS1-R-INT Series Servo Motor

Selection Guide

Industrial Automation | Intelligent Elevator | New Energy Vehicle | Industrial Robot | Rail Transit

Data code PS00017523A00

Preface

Introduction

Thank you for purchasing the MS1-R-INT global version series servo motor.

As the latest generation of servo motors developed by Inovance, the MS1-R-INT series servo motor carries a power range from 0.05 kW to 7.5 kW, with frame sizes ranging from 40 mm to 180 mm. It offers multiple types of inertia and speed configurations, with different types of encoders configured as required by customers.

It is used for accurate position control, speed control, and torque control in industries including semiconductors, lithium batteries, silicon, machine tools, mobile phones, printing and packaging, pharmacy, textile, and display.

This user guide presents motor information, model selection instructions, and motor wiring methods. Contact Inovance for detailed information on the motor function and performance.

Documents provided by Inovance are subject to change without notice due to continuous product improvement.

Note

- The drawings in the user guide are sometimes shown without covers or protective guards. Remember to install the covers or protective guards as specified first, and then perform operations in accordance with the instructions.
- The drawings in the user guide are shown for descriptions only and may not match the product you purchased.
- The user guide is subject to change without notice due to product upgrade, specification modifications as well as efforts to improve the accuracy and convenience of the user guide.

Revision History

Date	Version	Description
March 2025	A00	Initial release

Access to the Guide

This guide is not delivered with the product. You can obtain the PDF version by the following methods:

- Do keyword search under Service and Support at *http://www.inovance.com*.
- Scan the QR code on the product with your smart phone.
- Scan the QR code below to install My Inovance app, where you can search for and download user guides.

Questions about the user guide

- Contact us if you have any questions or suggestions for this manual.
- The data and consistency of the contents in this manual have been reviewed as required. However, variance cannot be precluded entirely. The necessary revision will be made in the subsequent versions.

Warranty disclaimer

Inovance provides warranty service within the warranty period (as specified in your order) for any fault or damage that is not caused by improper operation of the user. Maintenance will be charged after the warranty expires.

Within the warranty period, maintenance will be charged for the following damage:

- Damage caused by operations not following the instructions in the user guide
- Damage caused by fire, flood, or unusual voltage
- Damage caused by unintended use of the product
- Damage caused by use beyond the specified scope of application of the product
- Damage or secondary damage caused by force majeure (natural disaster, earthquake, and lightning strike)

The maintenance is charged according to the latest Price List of Inovance. If otherwise agreed upon, the terms and conditions in the agreement shall prevail.

For details, see Product Warranty Card.

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1 Model Selection List

1.1 Motor Model Selection List

Motor with 26-bit encoder

Servo motor				Servo drive SV680******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class (V)	Size	Recommended drive model	Code
MS1H1 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H1-05B30CB-A6/S630R-INT	MS1H1-05B30CB-A6/S632R-INT	40	0.05	Single-phase/ Three-phase 220 V	A	S1R6	00002
MS1H1-10B30CB-A6/S630R-INT	MS1H1-10B30CB-A6/S632R-INT	40	0.1	Single-phase/ Three-phase 220 V			
MS1H1-20B30CB-A6/S631R-INT	MS1H1-20B30CB-A6/S634R-INT	60	0.2	Single-phase/ Three-phase 220 V			
MS1H1-40B30CB-A6/S631R-INT	MS1H1-40B30CB-A6/S634R-INT	60	0.4	Single-phase/ Three-phase 220 V		S2R8	00003
MS1H1-55B30CB-A6/S631R-INT	-	80	0.55	Single-phase/ Three-phase 220 V	C	S5R5	00005
MS1H1-75B30CB-A6/S631R-INT	MS1H1-75B30CB-A6/S634R-INT	80	0.75	Single-phase/ Three-phase 220 V		S5R5	00005
MS1H1-10C30CB-A6/S631R-INT	MS1H1-10C30CB-A6/S634R-INT	80	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H2 (n_N= 3000 rpm, n_{max}= 6000 rpm) series ratings							
MS1H2-10C30CB-A6/S631R-INT	MS1H2-10C30CB-A6/S634R-INT	100	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H2-10C30CD-A6/S631R-INT	MS1H2-10C30CD-A6/S634R-INT	100	1.0	Three-phase 380 V		T3R5	10001
MS1H2-15C30CB-A6/S631R-INT	MS1H2-15C30CB-A6/S634R-INT	100	1.5	Single-phase/ Three-phase 220 V	D	S012	00007
MS1H2-15C30CD-A6/S631R-INT	MS1H2-15C30CD-A6/S634R-INT	100	1.5	Three-phase 380 V	C	T5R4	10002
MS1H2-20C30CB-A6/S631R-INT	MS1H2-20C30CB-A6/S634R-INT	100	2.0	Three-phase 220 V	E	S018	00008

Servo motor				Servo drive SV680******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class (V)	Size	Recommended drive model	Code
MS1H2-20C30CD-A6/S631R-INT	MS1H2-20C30CD-A6/S634R-INT	100	2.0	Three-phase 380 V	D	T8R4	10003
MS1H2-25C30CB-A6/S631R-INT	MS1H2-25C30CB-A6/S634R-INT	100	2.5	Three-phase 220 V	E	S022	00009
MS1H2-25C30CD-A6/S631R-INT	MS1H2-25C30CD-A6/S634R-INT	100	2.5	Three-phase 380 V	D	T012	10004
MS1H2-30C30CB-A6/S631R-INT	MS1H2-30C30CB-A6/S634R-INT	130	3.0	Three-phase 220 V	E	S022	00009
MS1H2-30C30CD-A6/S631R-INT	MS1H2-30C30CD-A6/S634R-INT	130	3.0	Three-phase 380 V	D	T012	10004
MS1H2-40C30CB-A6/S631R-INT	MS1H2-40C30CB-A6/S634R-INT	130	4.0	Three-phase 220 V	E	S027	00010
MS1H2-40C30CD-A6/S631R-INT	MS1H2-40C30CD-A6/S634R-INT	130	4.0	Three-phase 380 V		T017	10005
MS1H2-50C30CB-A6/S631R-INT	MS1H2-50C30CB-A6/S634R-INT	130	5.0	Three-phase 220 V		S027	00010
MS1H2-50C30CD-A6/S631R-INT	MS1H2-50C30CD-A6/S634R-INT	130	5.0	Three-phase 380 V		T021	10006
MS1H3 (n_N=1500 rpm, n_{max}= 4500 rpm) series ratings							
MS1H3-85B15CB-A6/S631R-INT	MS1H3-85B15CB-A6/S634R-INT	130	0.85	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H3-85B15CD-A6/S631R-INT	MS1H3-85B15CD-A6/S634R-INT	130	0.85	Three-phase 380 V		T3R5	10001
MS1H3-13C15CB-A6/S631R-INT	MS1H3-13C15CB-A6/S634R-INT	130	1.3	Single-phase/ Three-phase 220 V	D	S012	00007
MS1H3-13C15CD-A6/S631R-INT	MS1H3-13C15CD-A6/S634R-INT	130	1.3	Three-phase 380 V	C	T5R4	10002
MS1H3-18C15CB-A6/S631R-INT	MS1H3-18C15CB-A6/S634R-INT	130	1.8	Three-phase 220 V	E	S018	00008
MS1H3-18C15CD-A6/S631R-INT	MS1H3-18C15CD-A6/S634R-INT	130	1.8	Three-phase 380 V	D	T8R4	10003
MS1H3-29C15CB-A6/S631R-INT	MS1H3-29C15CB-A6/S634R-INT	180	2.9	Three-phase 220 V	E	S022	00009
MS1H3-29C15CD-A6/S631R-INT	MS1H3-29C15CD-A6/S634R-INT	180	2.9	Three-phase 380 V	D	T012	10004
MS1H3-44C15CB-A6/S631R-INT	MS1H3-44C15CB-A6/S634R-INT	180	4.4	Three-phase 220 V	E	S027	00010

Servo motor				Servo drive SV680******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class (V)	Size	Recommended drive model	Code
MS1H3-44C15CD-A6/S631R-INT	MS1H3-44C15CD-A6/S634R-INT	180	4.4	Three-phase 380 V	E	T017	10005
MS1H3-55C15CD-A6/S631R-INT	MS1H3-55C15CD-A6/S634R-INT	180	5.5	Three-phase 380 V		T021	10006
MS1H3-75C15CD-A6/S631R-INT	MS1H3-75C15CD-A6/S634R-INT	180	7.5	Three-phase 380 V		T026	10007
MS1H4 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H4-05B30CB-A6/S630R-INT	MS1H4-05B30CB-A6/S632R-INT	40	0.05	Single-phase/ Three-phase 220 V	A	S1R6	00002
MS1H4-10B30CB-A6/S630R-INT	MS1H4-10B30CB-A6/S632R-INT	40	0.1	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-05B30CB-A6/S631R-INT	MS1H4-05B30CB-A6/S634R-INT	40	0.05	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-10B30CB-A6/S631R-INT	MS1H4-10B30CB-A6/S634R-INT	40	0.1	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-20B30CB-A6/S631R-INT	MS1H4-20B30CB-A6/S634R-INT	60	0.2	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-40B30CB-A6/S631R-INT	MS1H4-40B30CB-A6/S634R-INT	60	0.4	Single-phase/ Three-phase 220 V		S2R8	00003
MS1H4-55B30CB-A6/S631R-INT	-	80	0.55	Single-phase/ Three-phase 220 V	C	S5R5	00005
MS1H4-75B30CB-A6/S631R-INT	MS1H4-75B30CB-A6/S634R-INT	80	0.75	Single-phase/ Three-phase 220 V		S5R5	00005
MS1H4-10C30CB-A6/S631R-INT	MS1H4-10C30CB-A6/S634R-INT	80	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006

Note

Models of drives:

- S - 220 V voltage class
- T - 380 V voltage class
- 1R6 - Rated output current: 1.6 A; 2R8 - Rated output current: 2.8 A ... 026 - Rated output current: 26 A, 027 - Rated output current: 27 A

Motor with 23-bit encoder

Servo motor				Servo drive SV670******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H1 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H1-05B30CB-A330R-INT	MS1H1-05B30CB-A332R-INT	40	0.05	Single-phase/ Three-phase 220 V	A	S1R6	00002
MS1H1-10B30CB-A330R-INT	MS1H1-10B30CB-A332R-INT	40	0.1	Single-phase/ Three-phase 220 V			
MS1H1-20B30CB-A331R-INT	MS1H1-20B30CB-A334R-INT	60	0.2	Single-phase/ Three-phase 220 V			
MS1H1-40B30CB-A331R-INT	MS1H1-40B30CB-A334R-INT	60	0.4	Single-phase/ Three-phase 220 V		S2R8	00003
MS1H1-55B30CB-A331R-INT	-	80	0.55	Single-phase/ Three-phase 220 V	C	S5R5	00005
MS1H1-75B30CB-A331R-INT	MS1H1-75B30CB-A334R-INT	80	0.75	Single-phase/ Three-phase 220 V		S5R5	00005
MS1H1-10C30CB-A331R-INT	MS1H1-10C30CB-A334R-INT	80	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H2 (n_N= 3000 rpm, n_{max}= 6000 rpm) series ratings							
MS1H2-10C30CB-A331R-INT	MS1H2-10C30CB-A334R-INT	100	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H2-10C30CD-A331R-INT	MS1H2-10C30CD-A334R-INT	100	1.0	Three-phase 380 V		T3R5	10001
MS1H2-15C30CB-A331R-INT	MS1H2-15C30CB-A334R-INT	100	1.5	Single-phase/ Three-phase 220 V	D	S012	00007
MS1H2-15C30CD-A331R-INT	MS1H2-15C30CD-A334R-INT	100	1.5	Three-phase 380 V	C	T5R4	10002
MS1H2-20C30CB-A331R-INT	MS1H2-20C30CB-A334R-INT	100	2.0	Three-phase 220 V	E	S018[1]	00008
MS1H2-20C30CD-A331R-INT	MS1H2-20C30CD-A334R-INT	100	2.0	Three-phase 380 V	D	T8R4	10003
MS1H2-25C30CB-A331R-INT	MS1H2-25C30CB-A334R-INT	100	2.5	Three-phase 220 V	E	S022	00009

Servo motor				Servo drive SV670******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H2-25C30CD-A331R-INT	MS1H2-25C30CD-A334R-INT	100	2.5	Three-phase 380 V	D	T012[2]	10004
MS1H2-30C30CB-A331R-INT	MS1H2-30C30CB-A334R-INT	130	3.0	Three-phase 220 V	E	S022	00009
MS1H2-30C30CD-A331R-INT	MS1H2-30C30CD-A334R-INT	130	3.0	Three-phase 380 V	D	T012	10004
MS1H2-40C30CB-A331R-INT	MS1H2-40C30CB-A334R-INT	130	4.0	Three-phase 220 V	E	S027	00010
MS1H2-40C30CD-A331R-INT	MS1H2-40C30CD-A334R-INT	130	4.0	Three-phase 380 V	E	T017	10005
MS1H2-50C30CB-A331R-INT	MS1H2-50C30CB-A334R-INT	130	5.0	Three-phase 220 V		S027	00010
MS1H2-50C30CD-A331R-INT	MS1H2-50C30CD-A334R-INT	130	5.0	Three-phase 380 V		T021[3]	10006
MS1H3 (n_N=1500 rpm, n_{max}= 4500 rpm) series ratings							
MS1H3-85B15CB-A331R-INT	MS1H3-85B15CB-A334R-INT	130	0.85	Single-phase/ Three-phase 220 V	C	S7R6	00006
MS1H3-85B15CD-A331R-INT	MS1H3-85B15CD-A334R-INT	130	0.85	Three-phase 380 V		T3R5	10001
MS1H3-13C15CB-A331R-INT	MS1H3-13C15CB-A334R-INT	130	1.3	Single-phase/ Three-phase 220 V	D	S012	00007
MS1H3-13C15CD-A331R-INT	MS1H3-13C15CD-A334R-INT	130	1.3	Three-phase 380 V	C	T5R4	10002
MS1H3-18C15CB-A331R-INT	MS1H3-18C15CB-A334R-INT	130	1.8	Three-phase 220 V	D	S012	00007
MS1H3-18C15CD-A331R-INT	MS1H3-18C15CD-A334R-INT	130	1.8	Three-phase 380 V	D	T8R4	10003
MS1H3-29C15CB-A331R-INT	MS1H3-29C15CB-A334R-INT	180	2.9	Three-phase 220 V	E	S022	00009
MS1H3-29C15CD-A331R-INT	MS1H3-29C15CD-A334R-INT	180	2.9	Three-phase 380 V	D	T012	10004
MS1H3-44C15CB-A331R-INT	MS1H3-44C15CB-A334R-INT	180	4.4	Three-phase 220 V	E	S027	00010
MS1H3-44C15CD-A331R-INT	MS1H3-44C15CD-A334R-INT	180	4.4	Three-phase 380 V	E	T017	10005
MS1H3-55C15CD-A331R-INT	MS1H3-55C15CD-A334R-INT	180	5.5	Three-phase 380 V		T021	10006
MS1H3-75C15CD-A331R-INT	MS1H3-75C15CD-A334R-INT	180	7.5	Three-phase 380 V		T026	10007

Servo motor				Servo drive SV670******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H4 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H4-05B30CB-A330R-INT	MS1H4-05B30CB-A332R-INT	40	0.05	Single-phase/ Three-phase 220 V	A	S1R6	00002
MS1H4-10B30CB-A330R-INT	MS1H4-10B30CB-A332R-INT	40	0.1	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-05B30CB-A331R-INT	MS1H4-05B30CB-A334R-INT	40	0.05	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-10B30CB-A331R-INT	MS1H4-10B30CB-A334R-INT	40	0.1	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-20B30CB-A331R-INT	MS1H4-20B30CB-A334R-INT	60	0.2	Single-phase/ Three-phase 220 V		S1R6	00002
MS1H4-40B30CB-A331R-INT	MS1H4-40B30CB-A334R-INT	60	0.4	Single-phase/ Three-phase 220 V		S2R8	00003
MS1H4-55B30CB-A331R-INT	-	80	0.55	Single-phase/ Three-phase 220 V	C	S5R5	00005
MS1H4-75B30CB-A331R-INT	MS1H4-75B30CB-A334R-INT	80	0.75	Single-phase/ Three-phase 220 V		S5R5	00005
MS1H4-10C30CB-A331R-INT	MS1H4-10C30CB-A334R-INT	80	1.0	Single-phase/ Three-phase 220 V	C	S7R6	00006

Note

- [1] See the torque-speed characteristics curves of this model for S012 drives.
- [2] See the torque-speed characteristics curves of this model for T8R4 drive.
- [3] See the torque-speed characteristics curves of this model for T017 drives.

Motor with 23-bit encoder

Servo motor				Servo drive SV660******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H1 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H1-05B30CB-A330R-INT	MS1H1-05B30CB-A332R-INT	40	0.05	Single-phase 220 V	A	S1R6	00002
MS1H1-10B30CB-A330R-INT	MS1H1-10B30CB-A332R-INT	40	0.1	Single-phase 220 V			
MS1H1-20B30CB-A331R-INT	MS1H1-20B30CB-A334R-INT	60	0.2	Single-phase 220 V			
MS1H1-40B30CB-A331R-INT	MS1H1-40B30CB-A334R-INT	60	0.4	Single-phase 220 V		S2R8	00003
MS1H1-55B30CB-A331R-INT	-	80	0.55	Single-phase 220 V	B	S5R5	00005
MS1H1-75B30CB-A331R-INT	MS1H1-75B30CB-A334R-INT	80	0.75	Single-phase 220 V		S5R5	00005
MS1H1-10C30CB-A331R-INT	MS1H1-10C30CB-A334R-INT	80	1.0	Single-phase/Three-phase 220 V	C	S7R6	00006
MS1H2 (n_N= 3000 rpm, n_{max}= 6000 rpm) series ratings							
MS1H2-10C30CB-A331R-INT	MS1H2-10C30CB-A334R-INT	100	1.0	Single-phase/Three-phase 220 V	C	S7R6	00006
MS1H2-10C30CD-A331R-INT	MS1H2-10C30CD-A334R-INT	100	1.0	Three-phase 380 V		T3R5	10001
MS1H2-15C30CB-A331R-INT	MS1H2-15C30CB-A334R-INT	100	1.5	Single-phase/Three-phase 220 V	D	S012	00007
MS1H2-15C30CD-A331R-INT	MS1H2-15C30CD-A334R-INT	100	1.5	Three-phase 380 V	C	T5R4	10002
MS1H2-20C30CB-A331R-INT	MS1H2-20C30CB-A334R-INT	100	2.0	Single-phase/Three-phase 220 V	D	S012	00007
MS1H2-20C30CD-A331R-INT	MS1H2-20C30CD-A334R-INT	100	2.0	Three-phase 380 V	D	T8R4	10003
MS1H2-25C30CD-A331R-INT	MS1H2-25C30CD-A334R-INT	100	2.5	Three-phase 380 V	D	T012[1]	10004
MS1H2-30C30CD-A331R-INT	MS1H2-30C30CD-A334R-INT	130	3.0	Three-phase 380 V	D	T012	10004

Servo motor				Servo drive SV660******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H2-40C30CD-A331R-INT	MS1H2-40C30CD-A334R-INT	130	4.0	Three-phase 380 V	E	T017	10005
MS1H2-50C30CD-A331R-INT	MS1H2-50C30CD-A334R-INT	130	5.0	Three-phase 380 V		T021[2]	10006
MS1H3 (n_N=1500 rpm, n_{max}= 4500 rpm) series ratings							
MS1H3-85B15CB-A331R-INT	MS1H3-85B15CB-A334R-INT	130	0.85	Single-phase/Three-phase 220 V	C	S7R6	00006
MS1H3-85B15CD-A331R-INT	MS1H3-85B15CD-A334R-INT	130	0.85	Three-phase 380 V		T3R5	10001
MS1H3-13C15CB-A331R-INT	MS1H3-13C15CB-A334R-INT	130	1.3	Single-phase/Three-phase 220 V	D	S012	00007
MS1H3-13C15CD-A331R-INT	MS1H3-13C15CD-A334R-INT	130	1.3	Three-phase 380 V	C	T5R4	10002
MS1H3-18C15CB-A331R-INT	MS1H3-18C15CB-A334R-INT	130	1.8	Single-phase/Three-phase 220 V	D	S012	00007
MS1H3-18C15CD-A331R-INT	MS1H3-18C15CD-A334R-INT	130	1.8	Three-phase 380 V	D	T8R4	10003
MS1H3-29C15CD-A331R-INT	MS1H3-29C15CD-A334R-INT	180	2.9	Three-phase 380 V	D	T012	10004
MS1H3-44C15CD-A331R-INT	MS1H3-44C15CD-A334R-INT	180	4.4	Three-phase 380 V	E	T017	10005
MS1H3-55C15CD-A331R-INT	MS1H3-55C15CD-A334R-INT	180	5.5	Three-phase 380 V		T021	10006
MS1H3-75C15CD-A331R-INT	MS1H3-75C15CD-A334R-INT	180	7.5	Three-phase 380 V		T026	10007
MS1H4 (n_N= 3000 rpm, n_{max}=7000 rpm) series ratings							
MS1H4-05B30CB-A330R-INT	MS1H4-05B30CB-A332R-INT	40	0.05	Single-phase 220 V	A	S1R6	00002
MS1H4-10B30CB-A330R-INT	MS1H4-10B30CB-A332R-INT	40	0.1	Single-phase 220 V		S1R6	00002
MS1H4-05B30CB-A331R-INT	MS1H4-05B30CB-A334R-INT	40	0.05	Single-phase 220 V		S1R6	00002
MS1H4-10B30CB-A331R-INT	MS1H4-10B30CB-A334R-INT	40	0.1	Single-phase 220 V		S1R6	00002
MS1H4-20B30CB-A331R-INT	MS1H4-20B30CB-A334R-INT	60	0.2	Single-phase 220 V		S1R6	00002
MS1H4-40B30CB-A331R-INT	MS1H4-40B30CB-A334R-INT	60	0.4	Single-phase 220 V		S2R8	00003

Servo motor				Servo drive SV660******INT			
Models without brake	Models with brake	Frame size (mm)	Capacity (kW)	Voltage class	Size	Recommended drive model	Code
MS1H4-55B30CB-A331R-INT	-	80	0.55	Single-phase 220 V	B	S5R5	00005
MS1H4-75B30CB-A331R-INT	MS1H4-75B30CB-A334R-INT	80	0.75	Single-phase 220 V		S5R5	00005
MS1H4-10C30CB-A331R-INT	MS1H4-10C30CB-A334R-INT	80	1.0	Single-phase/Three-phase 220 V		S7R6	00006

Note

- [1] See the torque-speed characteristics of this model for T8R4 drives.
- [2] See the torque-speed characteristics of this model for T017 drives.

Table 1–1 Relationship between servo drive and motor encoder

Drive model	Encoder type	Reference
SV680*****INT	A6: 26-bit multi-turn absolute encoder	SV680-INT Series Servo Drive User Guide
SV680*****INT	S6: 26-bit absolute multi-turn encoder (functional safety type)	
SV670*****INT	A3: 23-bit multi-turn absolute encoder	SV670-INT Series Servo Drive User Guide
SV660*****INT	A3: 23-bit multi-turn absolute encoder	SV660P Series Servo Drive Selection Guide SV660N Series Servo Drive Selection Guide SV660F Series Servo Drive Selection Guide

Note

- Drive models S018, S022, and S027 are only available for SV670 and SV680 series servo drives.
- Servo motors match different series of servo drives, and the maximum speed and maximum torque output of the motor vary slightly. See the servo drive selection guide for details.
- Servo motors designed to work with 23-bit or 26-bit encoders share the same dimensions.

1.2 Comparison of MS1-R Series Motor and MS1-Z Series Motor

Power (kW)	Frame size (mm)	MS1-Z series		MS1-R series	
		Material code	Motor model	Material code	Motor model
0.05	40	01111530	MS1H1-05B30CB-A330Z-INT	01119487	MS1H4-05B30CB-A330R-INT
0.05	40	01111531	MS1H1-05B30CB-A332Z-INT	01119486	MS1H4-05B30CB-A332R-INT
0.1	40	01111532	MS1H1-10B30CB-A330Z-INT	01119489	MS1H4-10B30CB-A330R-INT
0.1	40	01111533	MS1H1-10B30CB-A332Z-INT	01119488	MS1H4-10B30CB-A332R-INT
0.2	60	01111534	MS1H1-20B30CB-A331Z-INT	01117877	MS1H4-20B30CB-A331R-INT
0.2	60	01111535	MS1H1-20B30CB-A334Z-INT	01117875	MS1H4-20B30CB-A334R-INT
0.4	60	01111536	MS1H1-40B30CB-A331Z-INT	01117873	MS1H4-40B30CB-A331R-INT

Power (kW)	Frame size (mm)	MS1-Z series		MS1-R series	
		Material code	Motor model	Material code	Motor model
0.4	60	01111537	MS1H1-40B30CB-A334Z-INT	01117874	MS1H4-40B30CB-A334R-INT
0.55	80	01111538	MS1H1-55B30CB-A331Z-INT	01117878	MS1H4-55B30CB-A331R-INT
0.75	80	01111539	MS1H1-75B30CB-A331Z-INT	01117880	MS1H4-75B30CB-A331R-INT
0.75	80	01111540	MS1H1-75B30CB-A334Z-INT	01117879	MS1H4-75B30CB-A334R-INT
1	80	01111541	MS1H1-10C30CB-A331Z-INT	01117876	MS1H4-10C30CB-A331R-INT
0.05	40	01117871	MS1H4-10B30CB-A330Z-INT	01119489	MS1H4-10B30CB-A330R-INT
0.05	40	01117872	MS1H4-10B30CB-A332Z-INT	01119488	MS1H4-10B30CB-A332R-INT
0.4	60	01111542	MS1H4-40B30CB-A331Z-INT	01117873	MS1H4-40B30CB-A331R-INT
0.4	60	01111543	MS1H4-40B30CB-A334Z-INT	01117874	MS1H4-40B30CB-A334R-INT
0.75	80	01111544	MS1H4-75B30CB-A331Z-INT	01117880	MS1H4-75B30CB-A331R-INT
0.75	80	01111545	MS1H4-75B30CB-A334Z-INT	01117879	MS1H4-75B30CB-A334R-INT

Note

- The R version of the H4 inertia model is used to replace the Z version of the H1 and H4 inertia models.
- The H1 models of frame sizes 40/60/80 is ultra-small inertia type motor that mainly used for fast point-to-point motion control applications.

Power (kW)	Frame size (mm)	MS1-Z series		MS1-R series	
		Material code	Motor model	Material code	Motor model
1	100	01112992	MS1H2-10C30CB-A331Z-INT	01117912	MS1H2-10C30CB-A331R-INT
1	100	01113003	MS1H2-10C30CB-A334Z-INT	01117914	MS1H2-10C30CB-A334R-INT
1	100	01112983	MS1H2-10C30CD-A331Z-INT	01117913	MS1H2-10C30CD-A331R-INT
1	100	01112996	MS1H2-10C30CD-A334Z-INT	01117915	MS1H2-10C30CD-A334R-INT
1.5	100	01112966	MS1H2-15C30CB-A331Z-INT	01117916	MS1H2-15C30CB-A331R-INT
1.5	100	01112972	MS1H2-15C30CB-A334Z-INT	01117918	MS1H2-15C30CB-A334R-INT
1.5	100	01112962	MS1H2-15C30CD-A331Z-INT	01117917	MS1H2-15C30CD-A331R-INT
1.5	100	01112979	MS1H2-15C30CD-A334Z-INT	01117919	MS1H2-15C30CD-A334R-INT
2	100	01112990	MS1H2-20C30CD-A331Z-INT	01117921	MS1H2-20C30CD-A331R-INT
2	100	01112961	MS1H2-20C30CD-A334Z-S4-INT	01117923	MS1H2-20C30CD-A334R-INT
2.5	100	01112985	MS1H2-25C30CD-A331Z-INT	01117925	MS1H2-25C30CD-A331R-INT
2.5	100	01112981	MS1H2-25C30CD-A334Z-S4-INT	01117927	MS1H2-25C30CD-A334R-INT
3	130	01112976	MS1H2-30C30CD-A331Z-INT	01117929	MS1H2-30C30CD-A331R-INT
3	130	01112977	MS1H2-30C30CD-A334Z-S4-INT	01117931	MS1H2-30C30CD-A334R-INT
4	130	01112971	MS1H2-40C30CD-A331Z-INT	01117933	MS1H2-40C30CD-A331R-INT
4	130	01113000	MS1H2-40C30CD-A334Z-S4-INT	01117935	MS1H2-40C30CD-A334R-INT
5	130	01112987	MS1H2-50C30CD-A331Z-INT	01117937	MS1H2-50C30CD-A331R-INT
5	130	01112973	MS1H2-50C30CD-A334Z-S4-INT	01117939	MS1H2-50C30CD-A334R-INT
0.85	130	01111562	MS1H3-85B15CB-A331Z-INT	01117995	MS1H3-85B15CB-A331R-INT
0.85	130	01111563	MS1H3-85B15CB-A334Z-INT	01118007	MS1H3-85B15CB-A334R-INT
0.85	130	01111564	MS1H3-85B15CD-A331Z-INT	01117996	MS1H3-85B15CD-A331R-INT
0.85	130	01111565	MS1H3-85B15CD-A334Z-INT	01118008	MS1H3-85B15CD-A334R-INT
1.3	130	01111566	MS1H3-13C15CB-A331Z-INT	01117997	MS1H3-13C15CB-A331R-INT
1.3	130	01111567	MS1H3-13C15CB-A334Z-INT	01118009	MS1H3-13C15CB-A334R-INT
1.3	130	01111568	MS1H3-13C15CD-A331Z-INT	01117998	MS1H3-13C15CD-A331R-INT
1.3	130	01111569	MS1H3-13C15CD-A334Z-INT	01118010	MS1H3-13C15CD-A334R-INT
1.8	130	01111571	MS1H3-18C15CD-A331Z-INT	01118000	MS1H3-18C15CD-A331R-INT
1.8	130	01111570	MS1H3-18C15CD-A334Z-INT	01118012	MS1H3-18C15CD-A334R-INT

Power (kW)	Frame size (mm)	MS1-Z series		MS1-R series	
		Material code	Motor model	Material code	Motor model
2.9	180	01112991	MS1H3-29C15CD-A331Z-INT	01118002	MS1H3-29C15CD-A331R-INT
2.9	180	01112984	MS1H3-29C15CD-A334Z-INT	01118014	MS1H3-29C15CD-A334R-INT
4.4	180	01113002	MS1H3-44C15CD-A331Z-INT	01118004	MS1H3-44C15CD-A331R-INT
4.4	180	01112997	MS1H3-44C15CD-A334Z-INT	01118016	MS1H3-44C15CD-A334R-INT
5.5	180	01112968	MS1H3-55C15CD-A331Z-INT	01118005	MS1H3-55C15CD-A331R-INT
5.5	180	01112989	MS1H3-55C15CD-A334Z-INT	01118017	MS1H3-55C15CD-A334R-INT
7.5	180	01112982	MS1H3-75C15CD-A331Z-INT	01118006	MS1H3-75C15CD-A331R-INT
7.5	180	01112999	MS1H3-75C15CD-A334Z-INT	01118018	MS1H3-75C15CD-A334R-INT

Note

Motor model ended with "-S4" represents the duty cycle S4, indicating the motor is working under S4 duty, with the motor load ratio not exceeding 70%.

2 Product Information

2.1 Product Characteristics

- **Small size**
  - Small size with high torque output
  - Mounting flange, output shaft, and aviation connectors compatible with last generation of motors
- **High speed**
  - Maximum speed of MS1H1 and MS1H4 (frame sizes 40/60/80) improved from 6000 rpm to 7000 rpm
  - Maximum speed of MS1H2 models improved from 5000 rpm to 6000 rpm
  - Maximum speed of MS1H3 (frame sizes 130/180) motors improved from 3000 rpm to 4500 rpm
  - Speed of motors with 23-bit/26-bit encoders improved greatly
- **Low temperature rise rate**
  - Optimized electromagnetic circuits to reduce the temperature rise rate
  - Frame sizes 40, 60 and 80: Temperature rise reduced by 20K compared with previous generation of motors
- **High stiffness**
  Stiffness improved by 5 levels for typical models
- **Wide applicability**
  - Ultra-low inertia models (with 26-bit/23-bit encoder) are available for frame size 40/60/80, meeting the demands of quick jog control applications.
  - 220 V models are available for frame sizes 100/130/180.
  - Regular 26-bit absolute multi-turn absolute encoders and those of functional safety type are available to meet high accuracy requirements.
- **Compliant with Energy Efficiency Class 1 in China**
  Inovance motors of 550 W to 7.5 kW meet the energy efficiency requirements of GB30253-Level 1 (equal to IE5) in China.

2.2 Model and Nameplate

Model description

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

① **MS1 series servo motor**	② **Inertia and Capacity** H1: low inertia, small capacity H2: low inertia, medium capacity H3: medium inertia, medium capacity H4: medium inertia, small capacity	③ **Rated power (W)** One letter and two digits B: x 10 C: x 100 Example: 75B: 750 W
④ **Rated speed (rpm)** One letter and two digits B: x 10 C: x 100 Example: 30C: 3,000 rpm	⑤ **Voltage class (V)** B: 220 D: 380	⑥ **Encoder type** One letter and one digit A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety type A3: 23-bit multi-turn absolute encoder
⑦ **Shaft connection mode** 3: Solid shaft, with key and threaded hole	⑧ **Brake, reducer, oil seal** 0: Without oil seal or brake 1: With oil seal but no brake 2: Without oil seal but with brake 4: With oil seal and brake	⑨ **Series** R: R version ⑩ **Non-standard functions** INT: Global version

Nameplate description

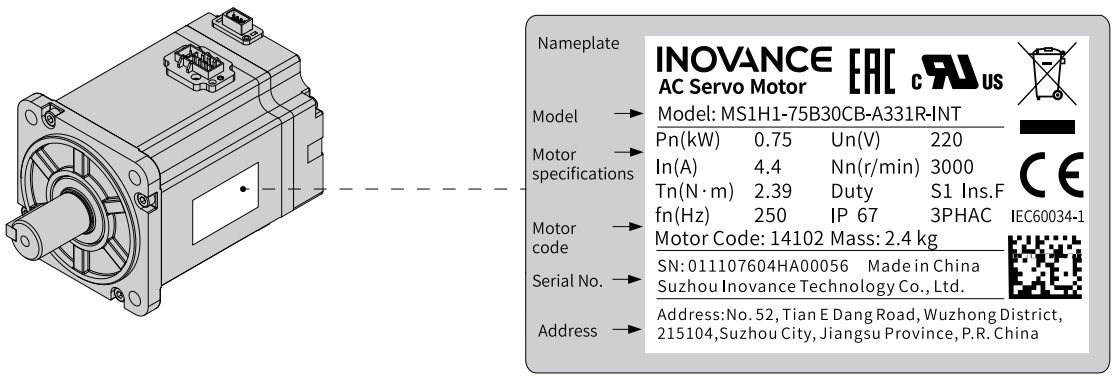


Figure 2-1 Model and Nameplate

2.3 Components

Motor (frame size 40)

- **Terminal-type servo motor**

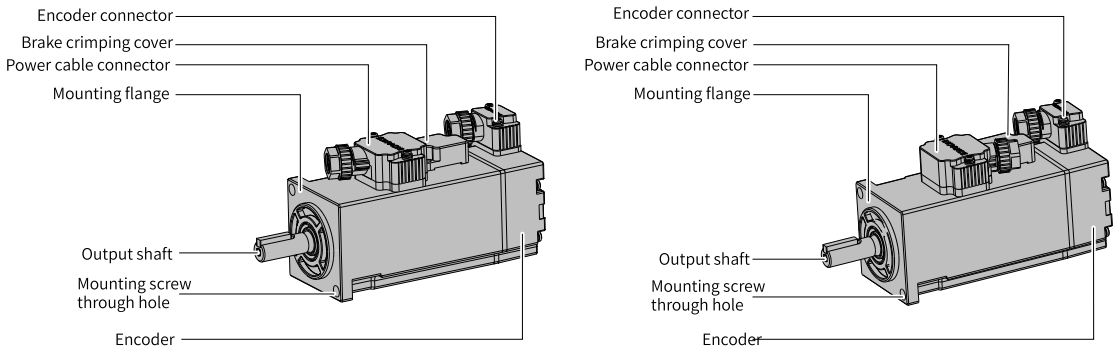


Figure 2-2 Components of a terminal-type servo motor (Left: motor with front cable outlet; Right: motor with rear cable outlet)

- **Flying leads type servo motors**

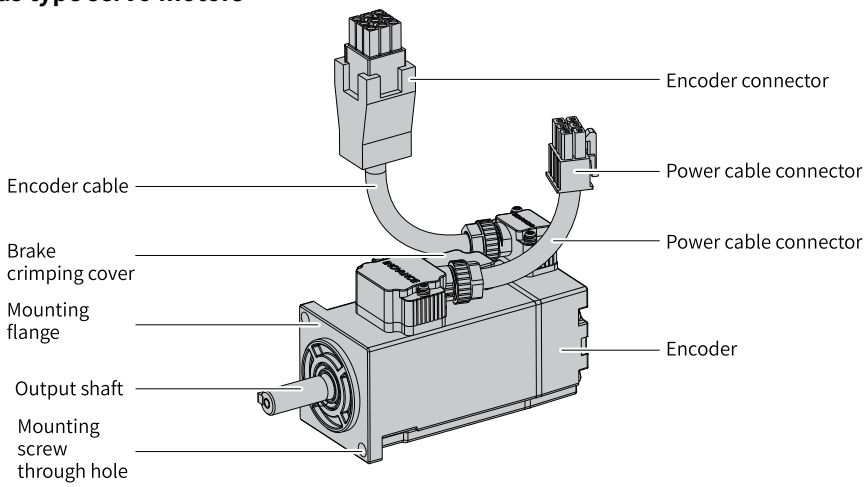


Figure 2-3 Components of flying leads type motors

Note

- For 50 W terminal type models, use rear outlet for power cables.
- For 100 W models, if the mounting flange face is internally stepped type, only terminal-type models can be used, which are equipped with power cables with rear outlet.

Motor (frame sizes 60/80)

- **Terminal-type servo motor**

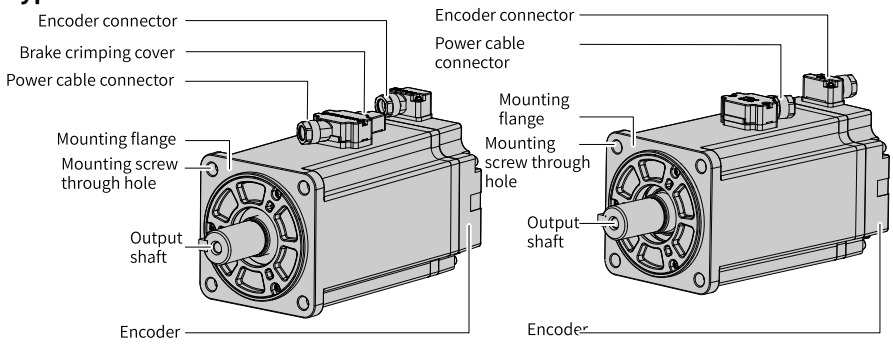


Figure 2-4 Components of a terminal-type servo motor (Left: motor with front cable outlet; Right: motor with rear cable outlet)

- **Flying leads type servo motors**

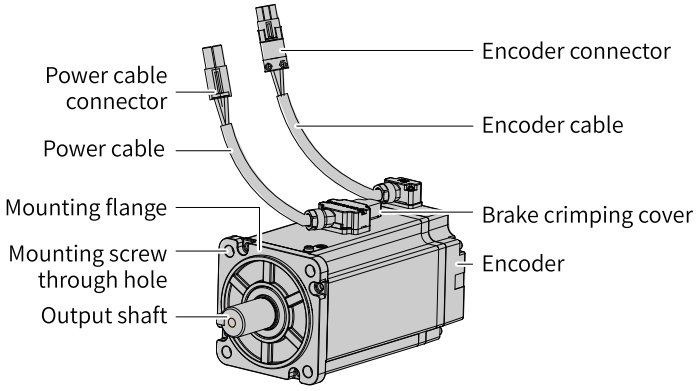


Figure 2-5 Components of flying leads type motors

Motor (frame sizes 100/130/180)

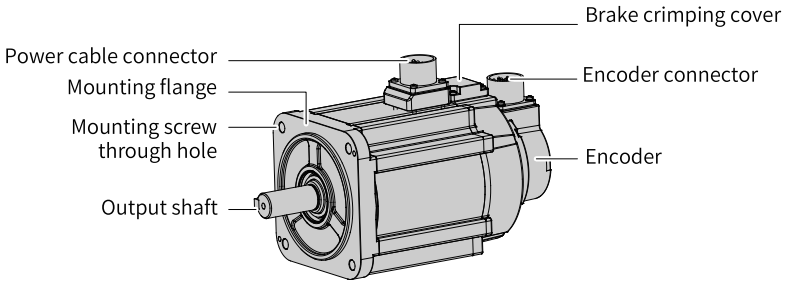


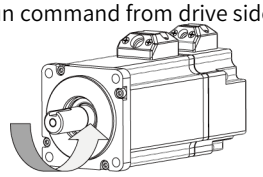
Figure 2-6 Components of servo drives in frame sizes 100/130/180

2.4 Motor Models

Motor type		Rated output capacity (kW)	Encoder
Low inertia, small capacity	MS1H1 	0.05, 0.1, 0.2, 0.4, 0.55, 0.75, 1.0	A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety type A3: 23-bit multi-turn absolute encoder
Low inertia, medium capacity	MS1H2 	1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0	A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety type A3: 23-bit multi-turn absolute encoder
Medium inertia Medium capacity	MS1H3 	0.85, 1.3, 1.8, 2.9, 4.4, 5.5, 7.5	A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety type A3: 23-bit multi-turn absolute encoder
Medium inertia small capacity	MS1H4 	0.05, 0.1, 0.2, 0.4, 0.55, 0.75, 1.0	A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety type A3: 23-bit multi-turn absolute encoder

3 Product Specifications

3.1 Mechanical Characteristics

Item		Description
Duty cycle		S1 (Continuous duty)
Vibration level [1]		V15
Insulation resistance		500 VDC, above 10 MΩ
Excitation mode		Permanent magnetic
Mounting method		Flange
Thermal class		F (155)
Insulation voltage		1500 VAC for 1 min (220 V class) 1800 VAC for 1 min (380 V class)
Degree of protection		IP67 (excluding shaft opening and flying leads type motor connectors)
Direction of rotation		Rotates counterclockwise (CCW) when viewed from the shaft extension side with the forward run command from drive side.  CCW
Ambient condition	Ambient temperature	0°C to 40°C (non-frozen) (Derate based on the derating curve for temperatures above 40°C.)
	Ambient humidity	20% to 80% (without condensation)
	Installation location	• Free from corrosive or explosive gases • Well ventilated and with minimum amount of dust, waste and moisture. • Convenient for inspection and cleanup. • Derating is required only for installation altitudes higher than 1000 m. *"3.3 Derating Characteristics" on page 26* • Away sources that may generate strong magnetic field • Away from heating sources such as a heating stove • Use the motor with oil seal in places with grinding fluid, oil mist, iron powders or cuttings. • The oil seal is only dust-proof. It cannot withstand the intrusion of oil for a long term. • Not applicable to vacuum environment • Not applicable to inching (not full-turn) [2] and may be stuck • The motor with brake may generate a pattering sound. • In upstream applications of the motor, ensure the force applied on the shaft end is lower than the allowable axial force and radial force of the motor. • The system should avoid continuous operation at natural frequency. Exceeding the allowable vibration value may damage the system.
	Storage environment	Observe the following requirements for storing a de-energized motor. • Storage temperature: -20°C to +60°C (non-freezing) • Storage humidity: 20% to 80% RH (without condensation)
Shock resistance [3] [5]	Shock acceleration (taking flange side as standard)	490 m/s^2
	Number of shocks	2

Item		Description
Vibration resistance [4][5]	Vibration acceleration (taking flange side as standard)	Radial 49 m/s^2 Axial 24.5 m/s^2

Note

- [1] Vibration grade V15 indicates that the amplitude of vibration is less than 15 μm when a single servo motor rotates at its rated value.
- [2] For applications that require the motor shaft to swing back and forth at a certain angle, contact Inovance.
- [3] The resistance for shock in the vertical direction when the servo motor is mounted with the shaft in a horizontal position is shown in the preceding table.
- [4] The vertical, side-to-side, and front-to-back resistance for vibration in three directions when the servo motor is mounted with the shaft in a horizontal position is shown in the preceding table.
- [5] The vibration intensity applied on the motor is affected by the transmission structure, alignment accuracy, mounting conditions, and external vibration. These factors may enhance the vibration applied on the motor. When the maximum allowable vibration limit is exceeded, the motor may fail. Therefore, take necessary measures to limit resonance.
- The vibration intensity applied on the motor varies with applications.

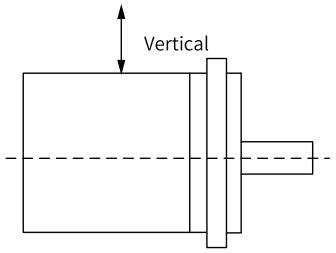


Figure 3-1 Shock applied on the motor

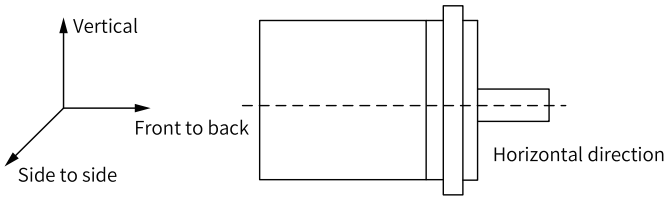


Figure 3-2 Vibration applied on the motor

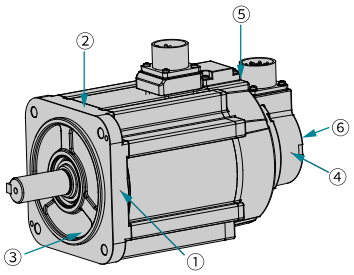


Figure 3-3 Maximum allowable vibration limit of the motor

Direction	Measuring point	Limit value (10 Hz to 2000 Hz)
Radial	①②	49 m/s^2
	④⑤	49 m/s^2
Axial	③	24.5 m/s^2
	⑥	24.5 m/s^2

Note

The preceding vibration/shock standards cannot be applied for a long term. For long-term application needs, contact Inovance.

3.2 Overload Characteristics

The equipment is compliant with NEC and CEC requirements and equipped with protective functions against overload and overtemperature.

The following overload protection curve applies to hot start at an ambient temperature of 40°C, which cannot guarantee continuous duty under 100%+ output. During use, keep the effective torque of the load within the continuous duty zone.

To protect different load motors, set the motor overload protection gain based on the overload capacity of the motor. Use the default gains in general conditions, however, when one of the following condition occurs, change the gains based on the temperature rise condition of the motor:

- The motor works in the environment with high ambient temperature.
- The motor is in cyclic motion featuring a short motion cycle and frequent acceleration/deceleration.
- Overload thermal protection only occurs during continuous energized operation. You need to check the motor temperature when the drive is powered off.

Motor overload protection curve is as follows:

- **MS1H1/H4 (frame sizes 40/60/80)**

Load ratio (%)	Operating time (s)
120	230
130	80
140	40
150	30
160	20
170	17
180	15
190	12
200	10
210	8.5
220	7
230	6
240	5.5
250	5
300	3
350	2

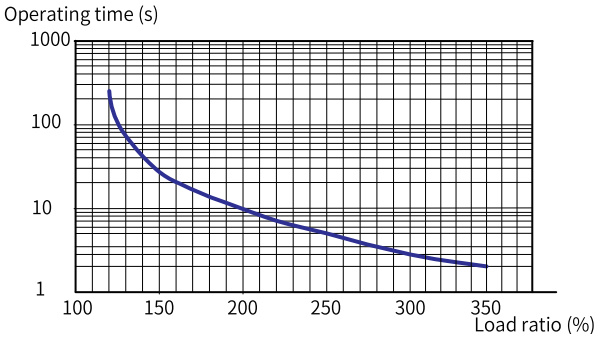


Figure 3-4 MS1H1/H4 (frame sizes 40/60/80) series motor overload curve

Note

The maximum torque of H1 and H4 models is the rated torque x 3.5.

- **MS1H2/MS1H3**

Load ratio (%)	Operating time (s)
115	6000
120	2533
125	1226
130	915
135	769
140	527
145	352
150	221
155	128
160	99
165	83
170	67
175	55
180	49
185	45
190	41
195	38
200	34
205	31
210	28
215	24
220	22
225	21
230	19
235	18
240	16
245	14
250	13
255	12
260	11
265	10
270	9

Load ratio (%)	Operating time (s)
275	9
280	8
285	7
290	6
295	5
300	5

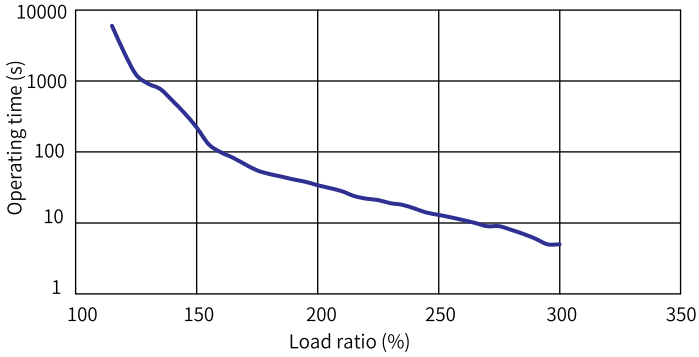


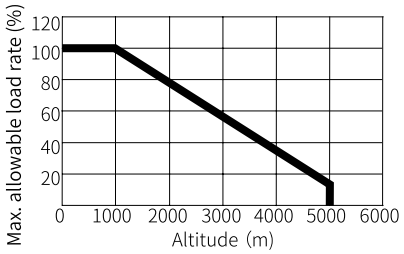
Figure 3-5 Overload curve of MS1H2 and MS1H3 series motors

Note

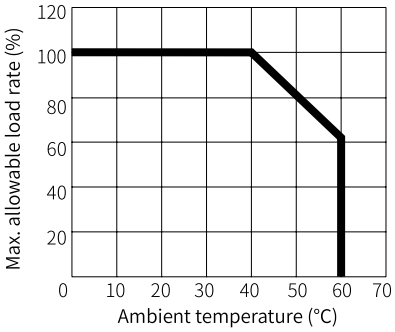
- The maximum torque of H2 models is the rated torque x 3.
- The maximum torque of H3 models is the rated torque x 2.5.

3.3 Derating Characteristics

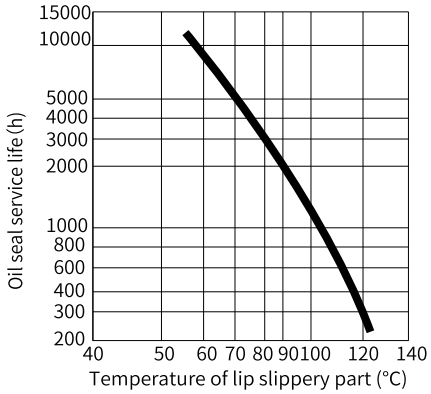
- **Altitude-based derating curve**



- **Temperature-based derating curve**



3.4 Temperature Curve of the Oil Seal



3.5 Load Moment of Inertia

The load moment of inertia represents the ratio of load inertia to the rotor inertia. The higher the load inertia ratio, the weaker the responsiveness will be. An excessively high inertia ratio can result in unstable operation. The permissible load inertia ratio of the servo motor is limited. The value is a general standard and varies according to the driving conditions of the servo motor.

An overvoltage alarm may occur during deceleration if the load moment of inertia exceeds the allowable value. For servo drives with a built-in braking resistor, an overload alarm my be present. In case of such alarms, take one of the following measures:

- Reduce the torque limit values.
- Reduce the deceleration rate.
- Reduce the maximum speed.
- Install an external braking resistor if the alarm cannot be cleared using the above measures.

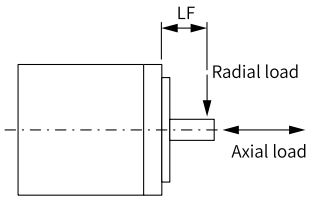
Caution

- For the built-in braking resistor of the drive, see Components.
- Even you use a built-in resistor, the energy generated in some regenerative conditions may exceed the allowable capacity loss (W) of the resistor. In this case, an external braking resistor is required.

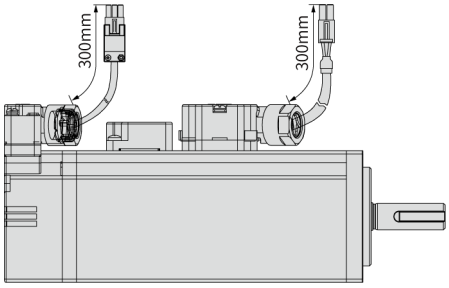
4 Motor Model Selection

4.1 Model Selection

- Description of torque-speed characteristics curves:
  - Technical data and torque/speed characteristic values in the following tables are applicable to motors working with Inovance servo drives with the armature coil temperature being 20°C.
  - Continuous working area: Refers to a series of states in which the motor can operate safely and continuously, and the actual torque must be located in this area.
  - Intermittent duty zone: Refers to a series of states in which the motor can run in a short time when the actual torque is greater than the rated torque.
- The characteristic values are obtained in cases where the motor is installed with the following heatsink (unit: mm):
  - Frame sizes 40/60/80: 250 x 250 x 6 (aluminum)
  - Frame sizes 100/130: 400 x 400 x 20 (steel)
  - Frame size 180: 550 x 550 x 30 (aluminum)
- Radial and axial loads of the motor:



- Dimensions of flying leads type motors
  Flying leads type motors with frame sizes 40/60/80 (model ended with “-S”) provide a drain wire of about 300 mm in length, as shown in the following figure.



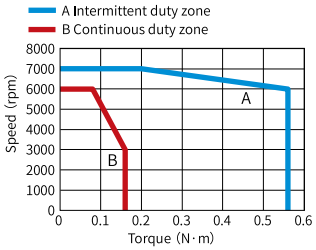
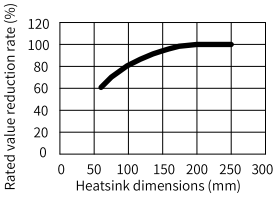
- The MS1H3 (frame sizes 130/180) model comes with a keyway. When the operating speed is above 3000 rpm, the motor must run with the keyway. If you need to run the motor without the keyway at speeds higher than 3000 rpm, contact Inovance.

Note

- Values inside the parentheses in sections 4.2 to 4.5 are parameters of the servo motor with brake.
- The motor with oil seal must be derated by 10% during use.
- Use your own DC power supply for 24 V power supply of the brake. For the cable connecting the DC power supply to the motor brake, it is recommended to use cables with a diameter of 0.2 mm^2 or above for motors with low power of 750 W or below. It is recommended to use cables with a diameter of 0.8 mm^2 or above for motors with a power of 750 W or above. The brake cannot share the power supply with other appliances to prevent the voltage or current from falling due to the simultaneous operation of other electrical appliances, which may result in brake malfunction.
- The brake apply time and release time vary with the discharge circuit. Check the actual action delay of the product during use. The holding brake cannot be used for braking purpose.

4.2 MS1H1 Series Motors with Low Inertia and Small Capacity

4.2.1 MS1H1-05B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.05		
Rated voltage (V)	220		
Rated torque (N·m)	0.16		
Maximum torque (N·m)	0.56		
Rated current (A)	1.2		Heatsink-based derating curve
Maximum current (A)	4.8		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.15		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.018±10%	
	Motor with brake	0.0208±10%	

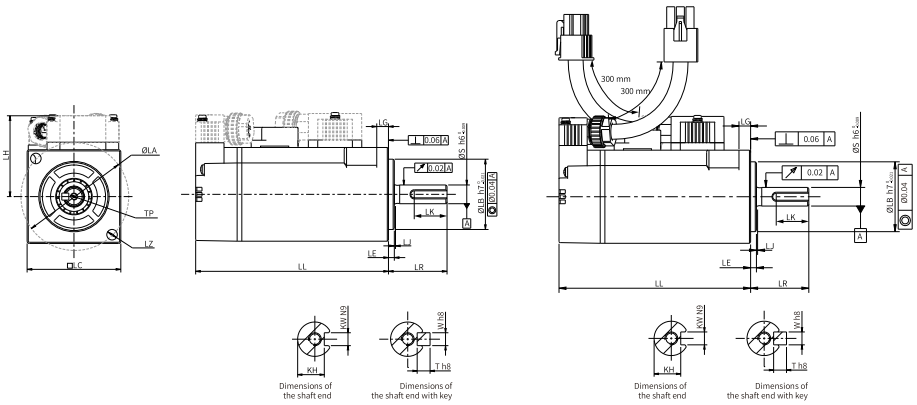
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

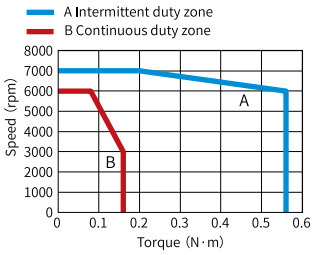
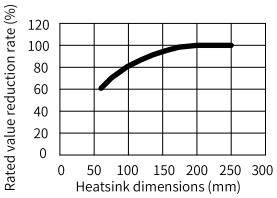
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)



LL	LC	LR	LA	LZ	LH	LG	LE	LJ
54.5 (81.8)	40	25±0.5	46	2 x φ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.26 (0.43)

4.2.2 MS1H1-05B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.05		
Rated voltage (V)	220		
Rated torque (N·m)	0.16		
Maximum torque (N·m)	0.56		
Rated current (A)	1.2		Heatsink-based derating curve
Maximum current (A)	4.8		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.15		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.018±10%	
	Motor with brake	0.0208±10%	

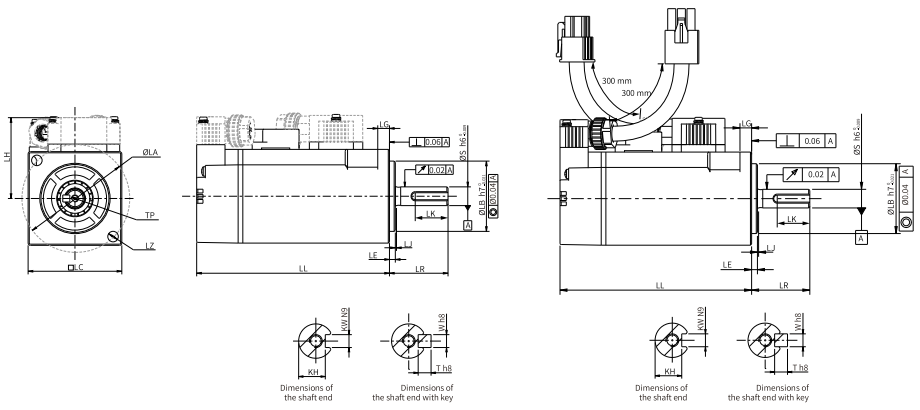
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

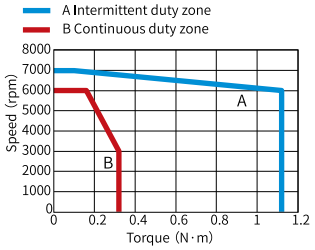


LL	LC	LR	LA	LZ	LH	LG	LE	LJ
54.5 (81.8)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.26 (0.43)

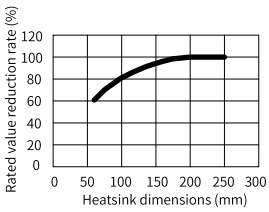
4.2.3 MS1H1-10B30CB-A6/S63*R-INT

Motor specifications		
Frame size (mm)	40	
Inertia, capacity	Low inertia, small capacity	
Rated power (kW)	0.1	
Rated voltage (V)	220	
Rated torque (N·m)	0.32	
Maximum torque (N·m)	1.12	
Rated current (A)	1.2	
Maximum current (A)	4.8	
Rated speed (rpm)	3000	
Maximum Speed (rpm)	7000	
Torque coefficient (N·m/A)	0.30	
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.0316±10%
	Motor with brake	0.0345±10%

Torque-Speed characteristics



Heatsink-based derating curve



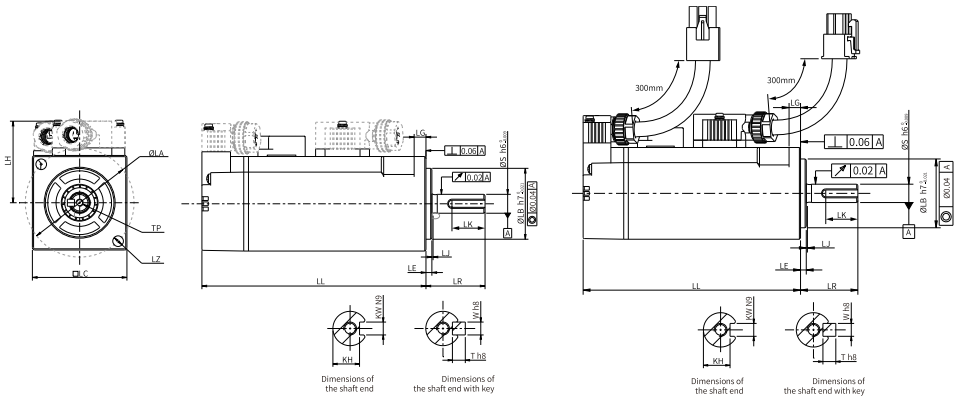
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

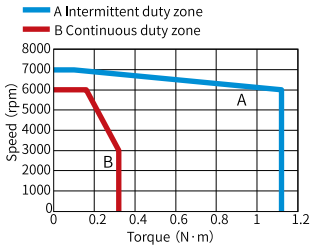
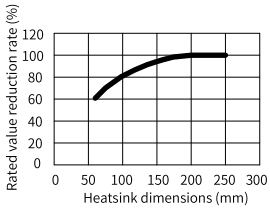
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)



LL	LC	LR	LA	LZ	LH	LG	LE	LJ
67 (94.3)	40	25±0.5	46	2 x φ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.35 (0.52)

4.2.4 MS1H1-10B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.1		
Rated voltage (V)	220		
Rated torque (N·m)	0.32		
Maximum torque (N·m)	1.12		
Rated current (A)	1.2		Heatsink-based derating curve
Maximum current (A)	4.8		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.30		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.0316±10%	
	Motor with brake	0.0345±10%	

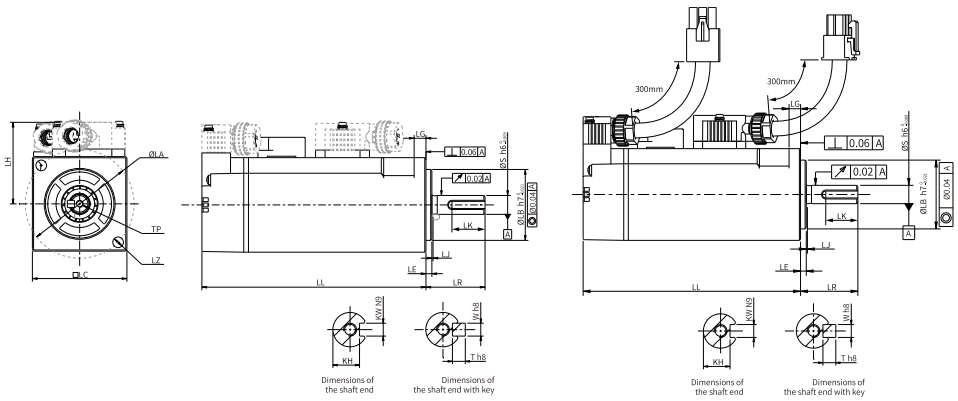
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

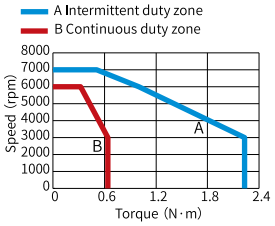


LL	LC	LR	LA	LZ	LH	LG	LE	LJ
67 (94.3)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.35 (0.52)

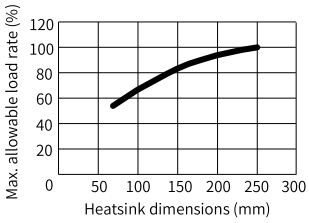
4.2.5 MS1H1-20B30CB-A6/S63*R-INT

Motor specifications		
Frame size (mm)	60	
Inertia, capacity	Low inertia, small capacity	
Rated power (kW)	0.2	
Voltage (V)	220	
Rated torque (N·m)	0.64	
Maximum torque (N·m)	2.24	
Rated current (A)	1.5	
Maximum current (A)	5.3	
Rated speed (rpm)	3000	
Maximum Speed (rpm)	7000	
Torque coefficient (N·m/A)	0.51	
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.094±10%
	Motor with brake	0.106±10%

Torque-Speed characteristics



Heatsink-based derating curve



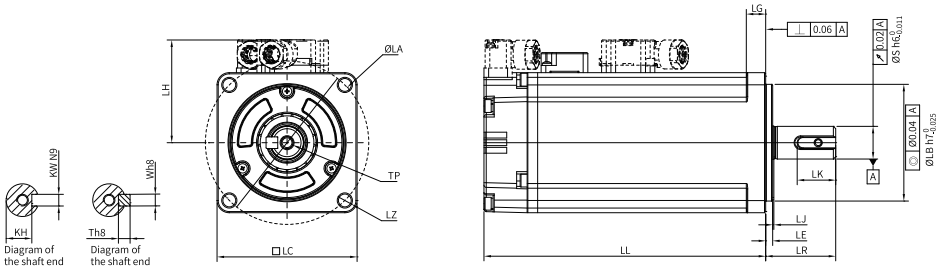
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1

Allowable load

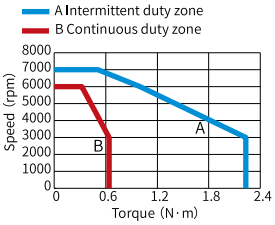
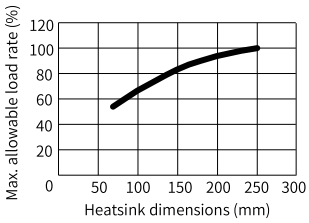
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	75.5 (103)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50h7^{0}_{-0.025}$	14	M5 x 12	16.5	$11^{0}_{-0.1}$	5	5	5	0.80 (1.17)

4.2.6 MS1H1-20B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.2		
Voltage (V)	220		
Rated torque (N·m)	0.64		
Maximum torque (N·m)	2.24		
Rated current (A)	1.5		Heatsink-based derating curve
Maximum current (A)	5.3		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.51		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.094±10%	
	Motor with brake	0.106±10%	

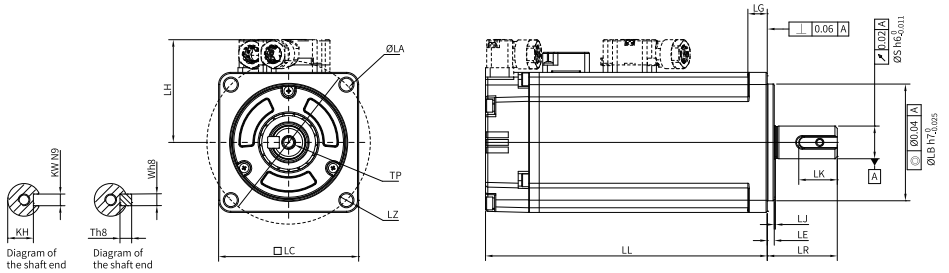
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1

Allowable load

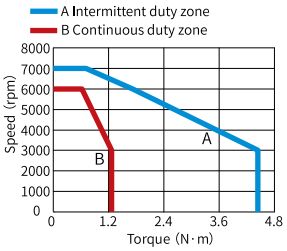
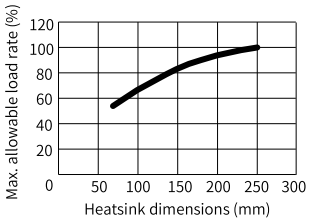
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	75.5 (103)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50h7^{0}_{-0.025}$	14	M5 x 12	16.5	$11^{0}_{-0.1}$	5	5	5	0.80 (1.17)

4.2.7 MS1H1-40B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.4		
Voltage (V)	220		
Rated torque (N·m)	1.27		
Maximum torque (N·m)	4.45		
Rated current (A)	2.5		Heatsink-based derating curve
Maximum current (A)	9.8		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.57		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.145±10%	
	Motor with brake	0.157±10%	

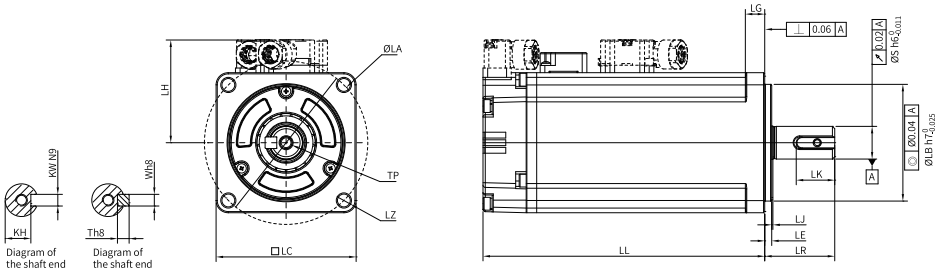
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1

Allowable load

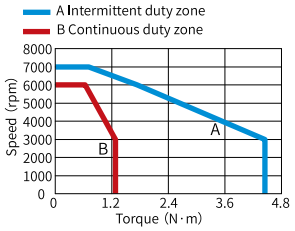
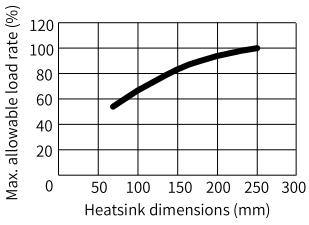
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	93 (121)	30±0.5	70	4 x φ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50 h7^{0}_{-0.025}$	14	M5 x 12	16.5	$11^{0}_{-0.1}$	5	5	5	1.11 (1.48)

4.2.8 MS1H1-40B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.4		
Voltage (V)	220		
Rated torque (N·m)	1.27		
Maximum torque (N·m)	4.45		
Rated current (A)	2.5		Heatsink-based derating curve
Maximum current (A)	9.8		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.57		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.145±10%	
	Motor with brake	0.157±10%	

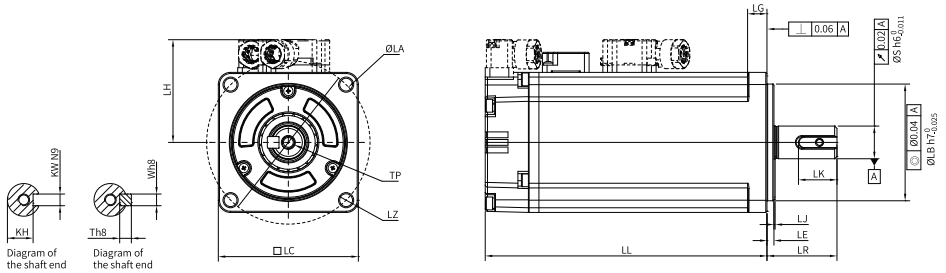
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1

Allowable load

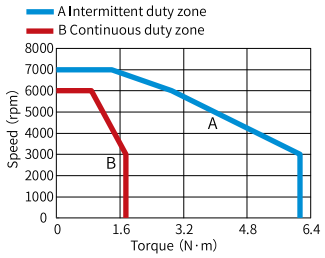
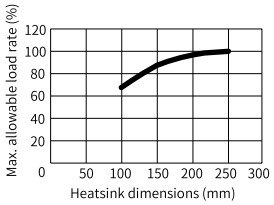
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	93 (121)	30±0.5	70	4 x φ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50 h7^{0}_{-0.025}$	14	M5 x 12	16.5	$11^{0}_{-0.1}$	5	5	5	1.11 (1.48)

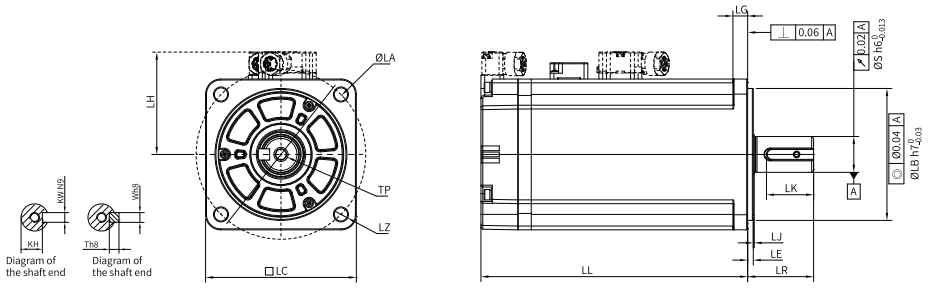
4.2.9 MS1H1-55B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.55		
Voltage (V)	220		
Rated torque (N·m)	1.75		
Maximum torque (N·m)	6.13		
Rated current (A)	3.9		Heatsink-based derating curve
Maximum current (A)	15		
Rated speed (rpm)	3000		
Maximum speed (rpm)	7000		
Torque coefficient (N·m/A)	0.51		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.55±10%	
	Motor with brake	-	

Allowable load

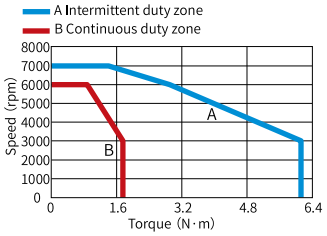
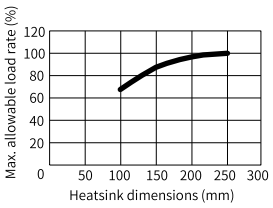
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	96.7	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70 h7^{0}_{-0.03}$	19	M6 x 20	25	$15.5^{0}_{-0.1}$	6	6	6	1.88

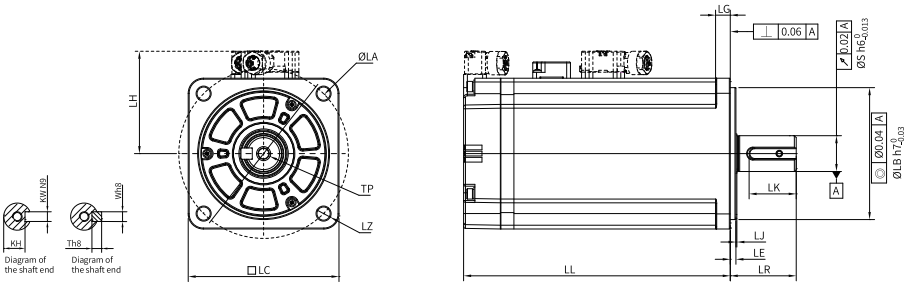
4.2.10 MS1H1-55B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.55		
Voltage (V)	220		
Rated torque (N·m)	1.75		
Maximum torque (N·m)	6.13		
Rated current (A)	3.9		Heatsink-based derating curve
Maximum current (A)	15		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.51		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.55±10%	
	Motor with brake	-	

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)

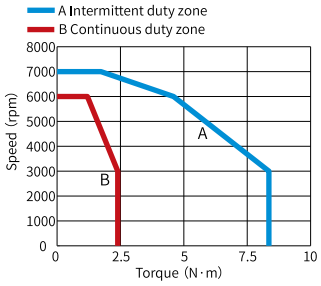


LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	96.7	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	25	$15.5^{0}_{-0.1}$	6	6	6	1.88

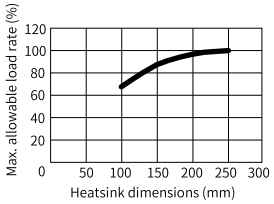
4.2.11 MS1H1-75B30CB-A6/S63*R-INT

Motor specifications		
Frame size (mm)	80	
Inertia, capacity	Low inertia, small capacity	
Rated power (kW)	0.75	
Voltage (V)	220	
Rated torque (N·m)	2.39	
Maximum torque (N·m)	8.36	
Rated current (A)	4.4	
Maximum current (A)	16.9	
Rated speed (rpm)	3000	
Maximum Speed (rpm)	7000	
Torque coefficient (N·m/A)	0.62	
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.68±10%
	Motor with brake	0.71±10%

Torque-Speed characteristics



Heatsink-based derating curve



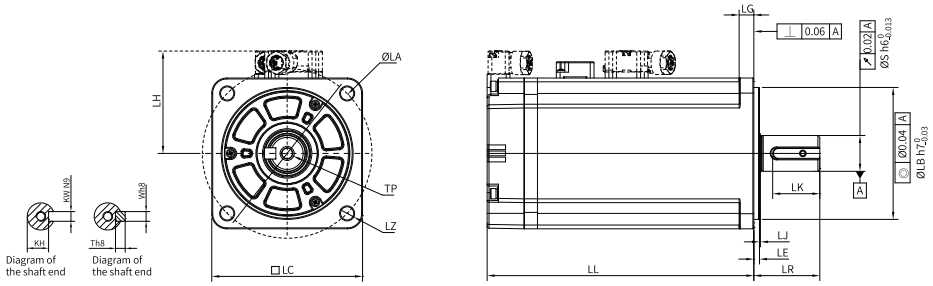
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

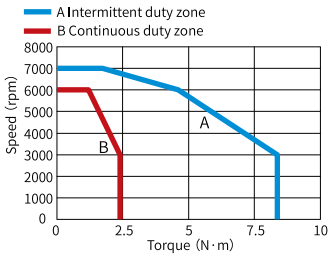
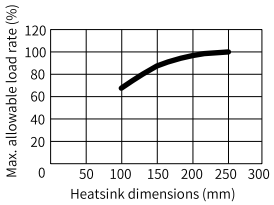
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	107.3 (141.5)	35±0.5	90	4 x ϕ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
ϕ70h7$^{0}_{-0.03}$	19	M6 x 20	25	15.5$^{0}_{-0.1}$	6	6	6	2.22 (2.88)

4.2.12 MS1H1-75B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	0.75		
Voltage (V)	220		
Rated torque (N·m)	2.39		
Maximum torque (N·m)	8.36		
Rated current (A)	4.4		Heatsink-based derating curve
Maximum current (A)	16.9		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.62		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.68±10%	
	Motor with brake	0.71±10%	

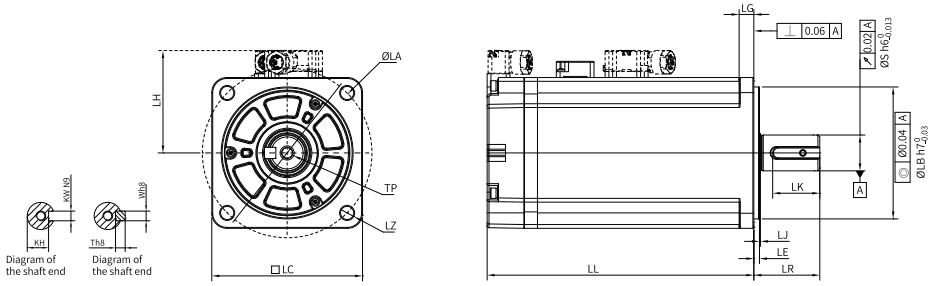
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

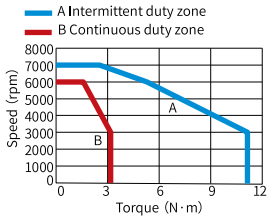
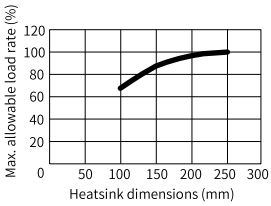
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	107.3 (141.5)	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	25	$15.5^{0}_{-0.1}$	6	6	6	2.22 (2.88)

4.2.13 MS1H1-10C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	11.1		
Continuous current (Arms)	6.2		Heatsink-based derating curve
Maximum current (Arms)	24		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N・m/Arms)	0.59		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.82±10%	
	Motor with brake	0.87±10%	

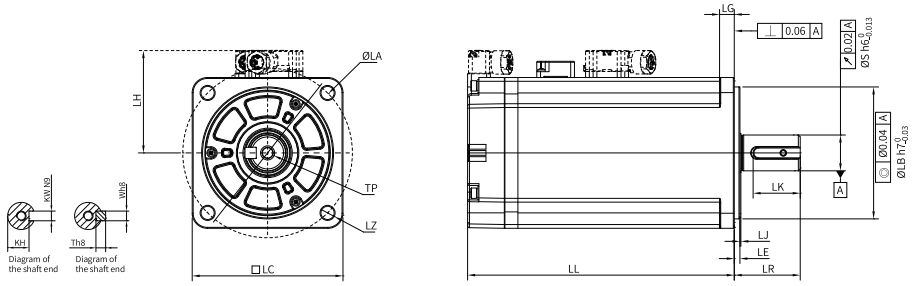
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

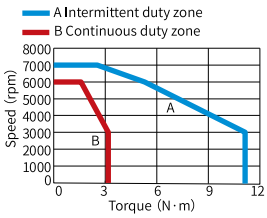
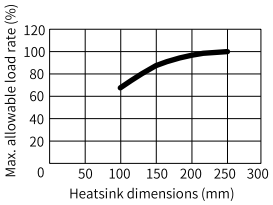
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	119.2 (153.4)	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	25	$15.5^{0}_{-0.1}$	6	6	6	2.61 (3.27)

4.2.14 MS1H1-10C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Low inertia, small capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	11.13		
Rated current (A)	6.2		Heatsink-based derating curve
Maximum current (A)	24		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.59		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.82±10%	
	Motor with brake	0.87±10%	

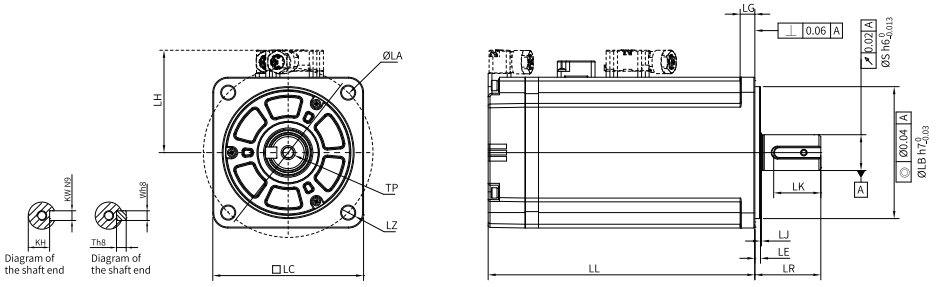
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



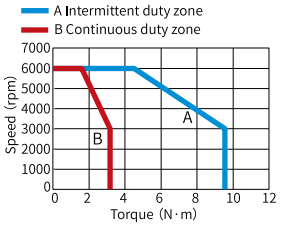
LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	119.2 (153.4)	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	25	$15.5^{0}_{-0.1}$	6	6	6	2.61 (3.27)

4.3 MS1H2 Series Motors with Low Inertia and Medium Capacity

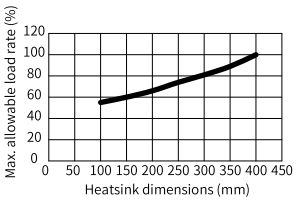
4.3.1 MS1H2-10C30CB-A6/S63*R-INT

Motor specifications		
Frame size (mm)	100	
Inertia, capacity	Low inertia, medium capacity	
Rated power (kW)	1.0	
Voltage (V)	220	
Rated torque (N·m)	3.18	
Maximum torque (N·m)	9.54	
Rated current (A)	6.4	
Maximum current (A)	23	
Rated speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Torque coefficient (N·m/A)	0.54	
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.78±10%
	Motor with brake	2.6±10%

Torque-Speed characteristics



Heatsink-based derating curve



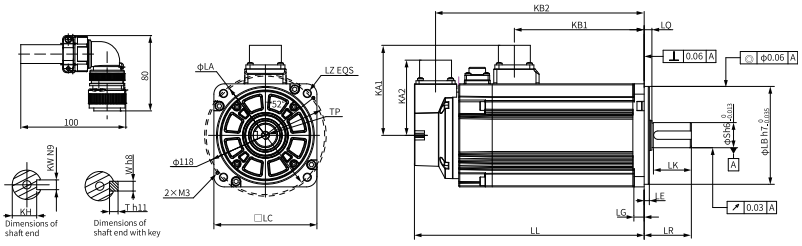
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

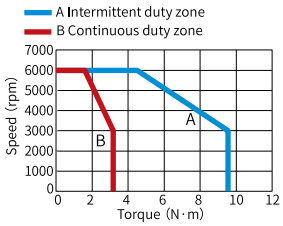
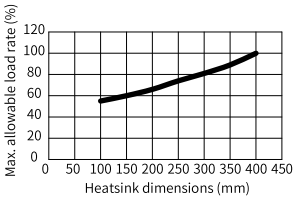
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	144 (172)	45±1	115	4 x φ7	88	75	73	123.5 (151.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	3.85 (4.9)

4.3.2 MS1H2-10C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	9.54		
Rated current (A)	6.4		Heatsink-based derating curve
Maximum current (A)	23		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.54		
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.78±10%	
	Motor with brake	2.6±10%	

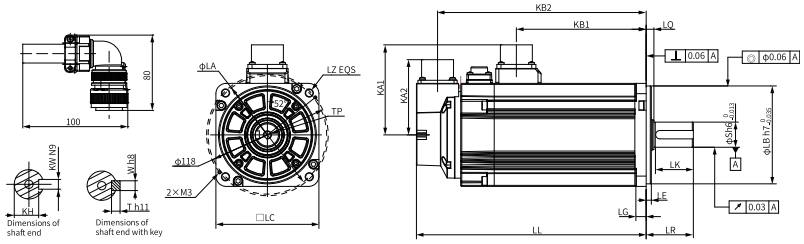
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

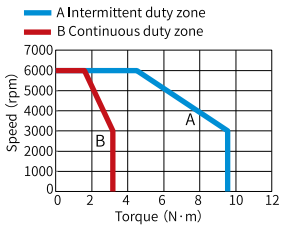
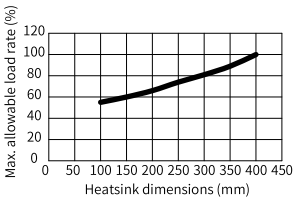
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	144 (172)	45±1	115	4 x φ7	88	75	73	123.5 (151.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	3.85 (4.9)

4.3.3 MS1H2-10C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.0		
Voltage (V)	380		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	9.54		
Rated current (A)	3.3		Heatsink-based derating curve
Maximum current (A)	11		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.07		
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.78±10%	
	Motor with brake	2.6±10%	

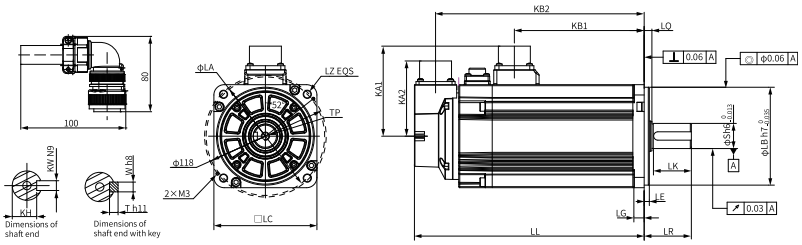
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

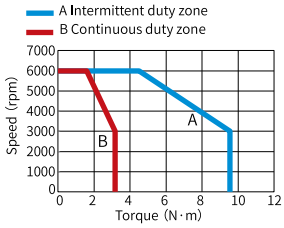
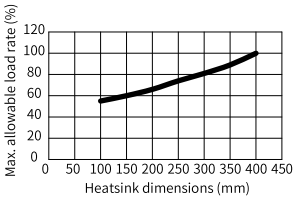
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	144 (172)	45±1	115	4 x φ7	88	75	73	123.5 (151.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	3.85 (4.9)

4.3.4 MS1H2-10C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.0		
Voltage (V)	380		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	9.54		
Rated current (A)	3.3		Heatsink-based derating curve
Maximum current (A)	11		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.07		
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.78±10%	
	Motor with brake	2.6±10%	

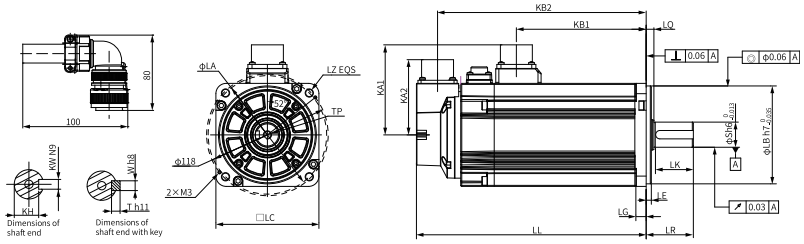
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

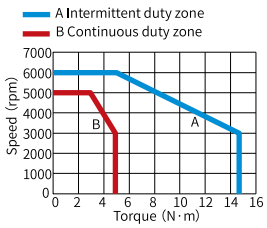
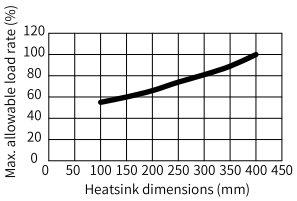
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	144 (172)	45±1	115	4 x φ7	88	75	73	123.5 (151.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	3.85 (4.9)

4.3.5 MS1H2-15C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.5		
Voltage (V)	220		
Rated torque (N·m)	4.9		
Maximum torque (N·m)	14.7		
Rated current (A)	8.6		Heatsink-based derating curve
Maximum current (A)	32		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.62		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.35±10%	
	Motor with brake	3.17±10%	

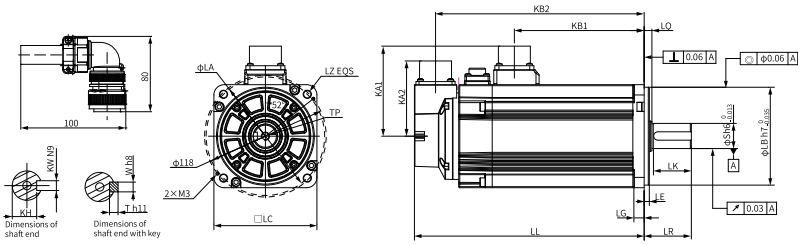
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

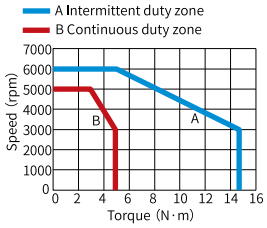
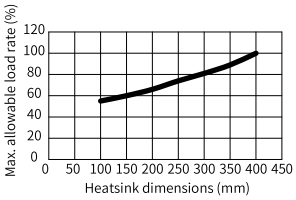
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	161 (189)	45±1	115	4 x φ7	88	92	73	140.5 (168.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	4.65 (5.75)

4.3.6 MS1H2-15C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.5		
Voltage (V)	220		
Rated torque (N·m)	4.9		
Maximum torque (N·m)	14.7		
Rated current (A)	8.6		Heatsink-based derating curve
Maximum current (A)	32		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.62		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.35±10%	
	Motor with brake	3.17±10%	

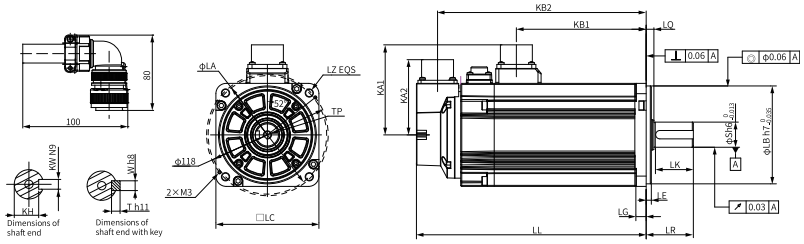
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

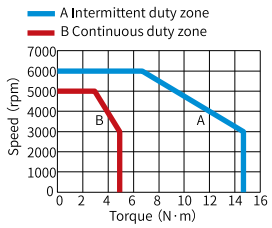
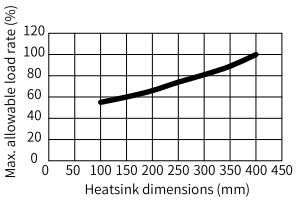
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	161 (189)	45±1	115	4 x φ7	88	92	73	140.5 (168.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	4.65 (5.75)

4.3.7 MS1H2-15C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.5		
Voltage (V)	380		
Rated torque (N·m)	4.9		
Maximum torque (N·m)	14.7		
Rated current (A)	4.2		Heatsink-based derating curve
Maximum current (A)	14		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.28		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.35±10%	
	Motor with brake	3.17±10%	

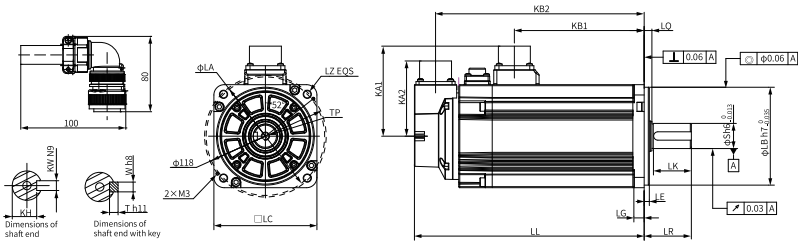
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

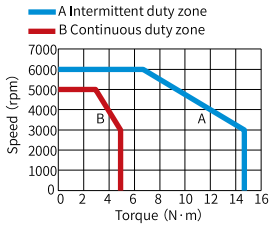
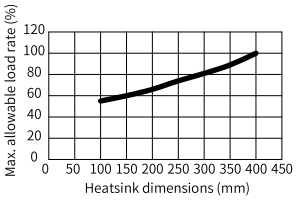
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	161 (189)	45±1	115	4 x φ7	88	92	73	140.5 (168.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	4.65 (5.75)

4.3.8 MS1H2-15C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	1.5		
Voltage (V)	380		
Rated torque (N·m)	4.9		
Maximum torque (N·m)	14.7		
Rated current (A)	4.2		Heatsink-based derating curve
Maximum current (A)	14		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.28		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.35±10%	
	Motor with brake	3.17±10%	

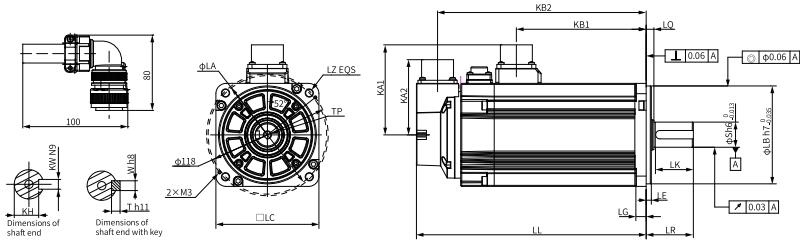
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

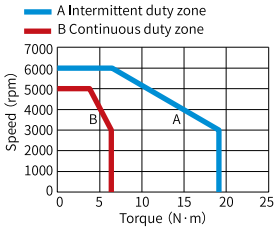
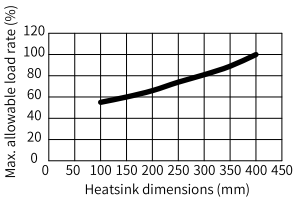
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	161 (189)	45±1	115	4 x φ7	88	92	73	140.5 (168.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	4.65 (5.75)

4.3.9 MS1H2-20C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.0		
Voltage (V)	220		
Rated torque (N·m)	6.36		
Maximum torque (N·m)	19.1		
Rated current (A)	11.3		Heatsink-based derating curve
Maximum current (A)	42		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.60		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.92±10%	
	Motor with brake	3.74±10%	

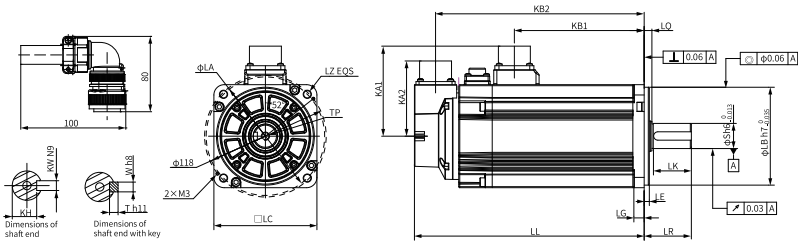
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

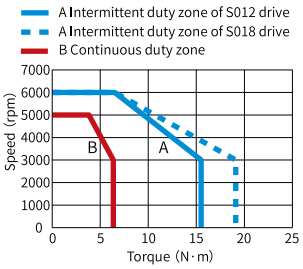
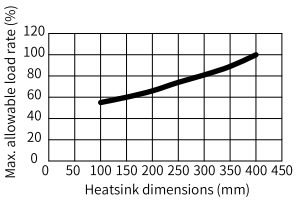
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	177 (205)	45±1	115	4 x φ7	88	108	73	156.5 (184.5)	10	5±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	5.5 (6.55)

4.3.10 MS1H2-20C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.0		
Voltage (V)	220		
Rated torque (N·m)	6.36		
Maximum torque (N·m)	19.1		
Rated current (A)	11.3		Heatsink-based derating curve
Maximum current (A)	42		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.60		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.92±10%	
	Motor with brake	3.74±10%	

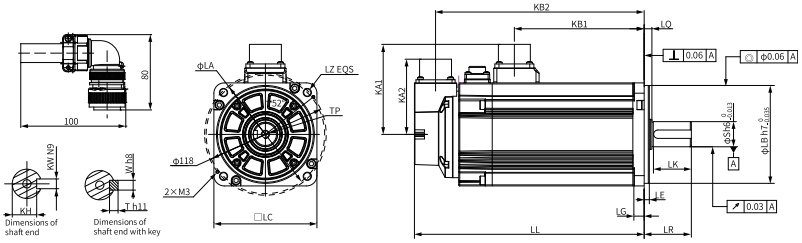
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

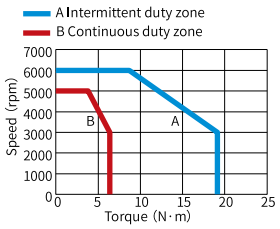
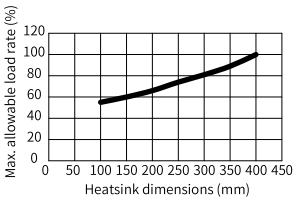
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	177 (205)	45±1	115	4 x φ7	88	108	73	156.5 (184.5)	10	5±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	5.5 (6.55)

4.3.11 MS1H2-20C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.0		
Voltage (V)	380		
Rated torque (N·m)	6.36		
Maximum torque (N·m)	19.1		
Rated current (A)	5.6		Heatsink-based derating curve
Maximum current (A)	20		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.19		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.92±10%	
	Motor with brake	3.74±10%	

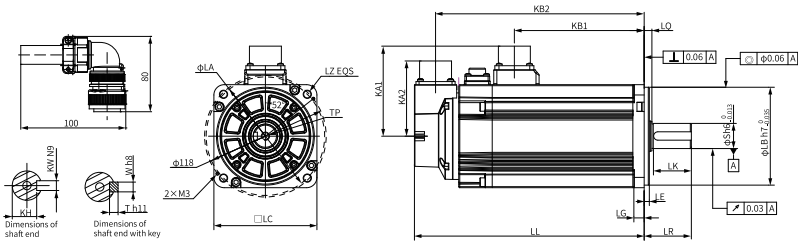
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

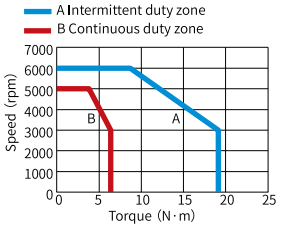
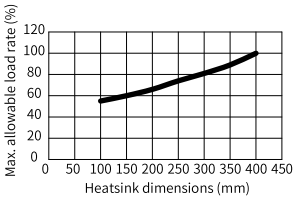
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	177 (205)	45±1	115	4 x φ7	88	108	73	156.5 (184.5)	10	5±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	5.5 (6.55)

4.3.12 MS1H2-20C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.0		
Voltage (V)	380		
Rated torque (N·m)	6.36		
Maximum torque (N·m)	19.1		
Rated current (A)	5.6		Heatsink-based derating curve
Maximum current (A)	20		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.19		
Rotor moment of inertia (kg·cm^2)	Motor without brake	2.92±10%	
	Motor with brake	3.74±10%	

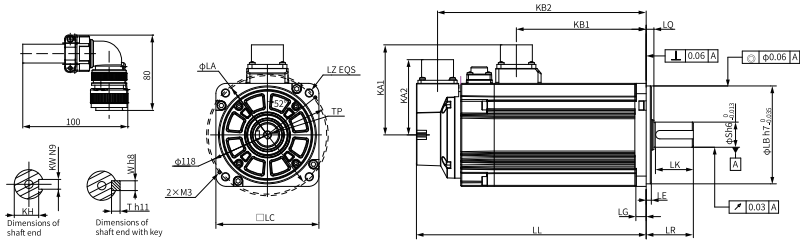
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

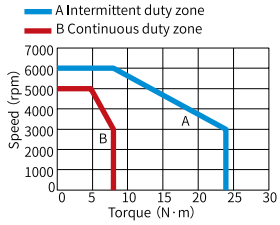
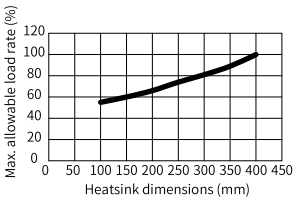
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	177 (205)	45±1	115	4 x φ7	88	108	73	156.5 (184.5)	10	5±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	5.5 (6.55)

4.3.13 MS1H2-25C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.5		
Voltage (V)	220		
Rated torque (N·m)	7.96		
Maximum torque (N·m)	23.9		
Rated current (A)	14.7		Heatsink-based derating curve
Maximum current (A)	53		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.60		
Rotor moment of inertia (kg·cm^2)	Motor without brake	3.49±10%	
	Motor with brake	4.3±10%	

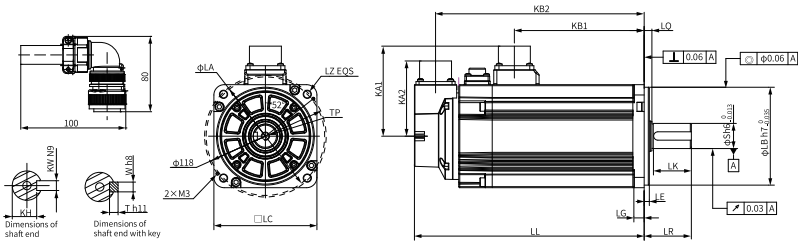
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

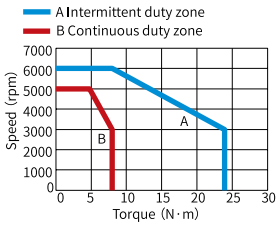
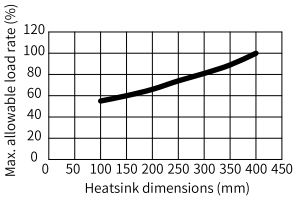
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	195 (223)	45±1	115	4 x φ7	88	126	73	174.5 (202.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	6.3 (7.35)

4.3.14 MS1H2-25C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.5		
Voltage (V)	220		
Rated torque (N·m)	7.96		
Maximum torque (N·m)	23.9		
Rated current (A)	14.7		Heatsink-based derating curve
Maximum current (A)	53		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.60		
Rotor moment of inertia (kg·cm^2)	Motor without brake	3.49±10%	
	Motor with brake	4.3±10%	

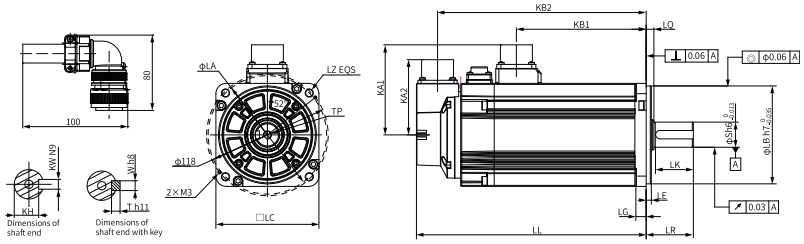
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

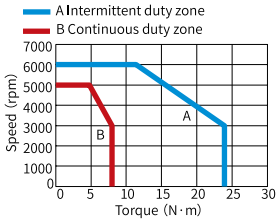
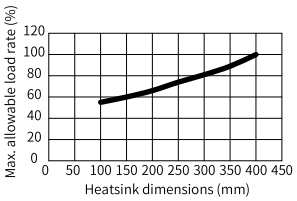
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	195 (223)	45±1	115	4 x φ7	88	126	73	174.5 (202.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	6.3 (7.35)

4.3.15 MS1H2-25C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.5		
Voltage (V)	380		
Rated torque (N·m)	7.96		
Maximum torque (N·m)	23.9		
Rated current (A)	7.2		Heatsink-based derating curve
Maximum current (A)	26		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.18		
Rotor moment of inertia (kg·cm^2)	Motor without brake	3.49±10%	
	Motor with brake	4.3±10%	

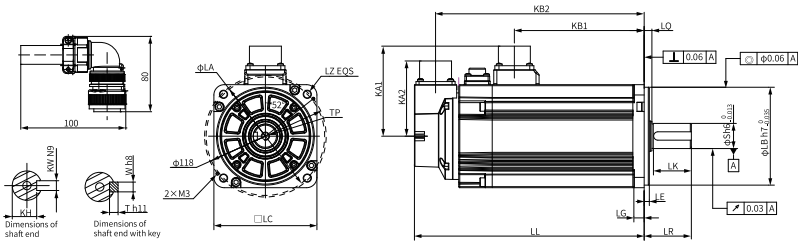
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

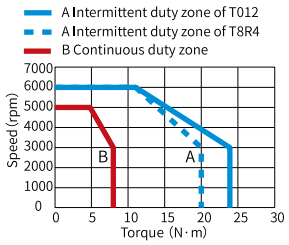
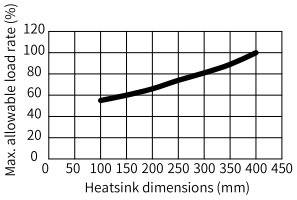
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	195 (223)	45±1	115	4 x φ7	88	126	73	174.5 (202.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	6.3 (7.35)

4.3.16 MS1H2-25C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	100		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	2.5		
Voltage (V)	380		
Rated torque (N·m)	7.96		
Maximum torque (N·m)	23.9		
Rated current (A)	7.2		Heatsink-based derating curve
Maximum current (A)	26		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.18		
Rotor moment of inertia (kg·cm^2)	Motor without brake	3.49±10%	
	Motor with brake	4.3±10%	

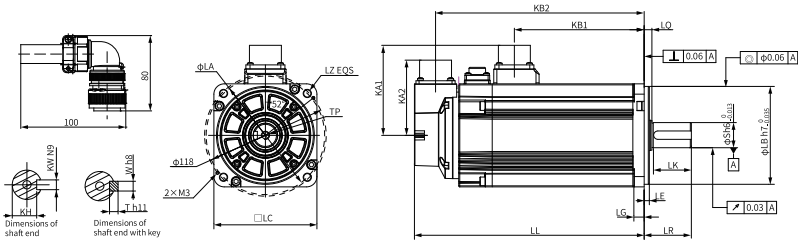
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
8	24	17.6	32.73	0.73	⩽ 100	⩽ 40	⩽ 1

Allowable load

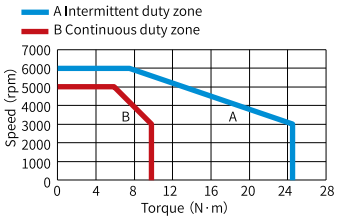
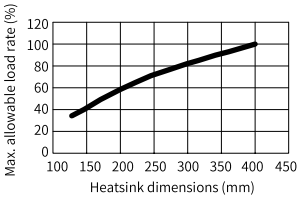
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
45	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
100	195 (223)	45±1	115	4 x φ7	88	126	73	174.5 (202.5)	10	5±0.3
LQ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
7.5±0.75	φ95h7$^{0}_{-0.035}$		24	M8 x 16	36	20$^{0}_{-0.2}$	8	8	7	6.3 (7.35)

4.3.17 MS1H2-30C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	3.0		
Voltage (V)	220		
Rated torque (N·m)	9.8		
Maximum torque (N·m)	24.5		
Rated current (A)	16.6		Heatsink-based derating curve
Maximum current (A)	55		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.67		
Rotor moment of inertia (kg·cm^2)	Motor without brake	6.4±10%	
	Motor with brake	9.38±10%	

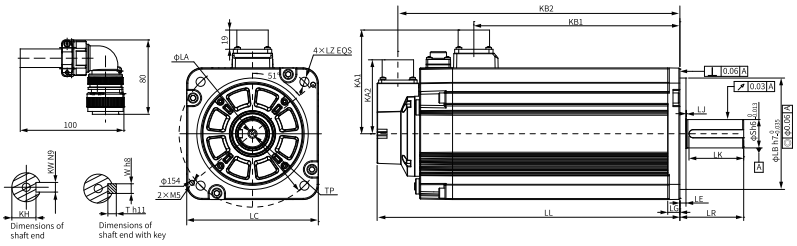
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)

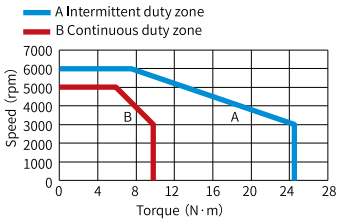


LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	198 (223)	63±1	145	4 x φ9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	10.0 (11.9)

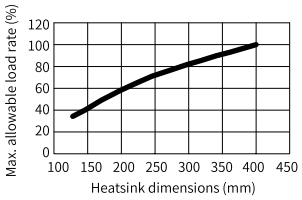
4.3.18 MS1H2-30C30CB-A33*R-INT

Motor specifications		
Frame size (mm)	130	
Inertia, capacity	Low inertia, medium capacity	
Rated power (kW)	3.0	
Voltage (V)	220	
Rated torque (N·m)	9.8	
Maximum torque (N·m)	24.5	
Rated current (A)	16.6	
Maximum current (A)	55	
Rated speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Torque coefficient (N·m/A)	0.67	
Rotor moment of inertia (kg·cm^2)	Motor without brake	6.4±10%
	Motor with brake	9.38±10%

Torque-Speed characteristics



Heatsink-based derating curve



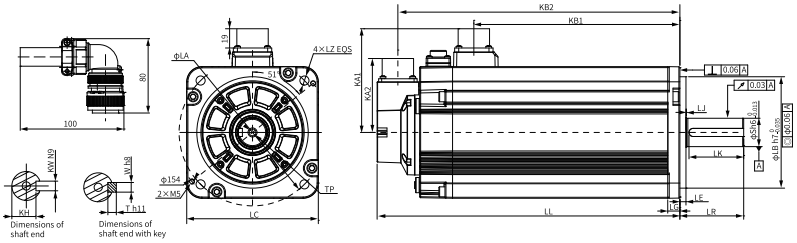
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

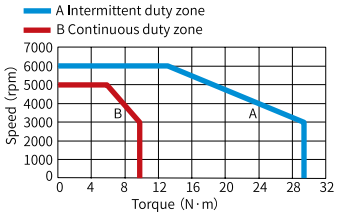
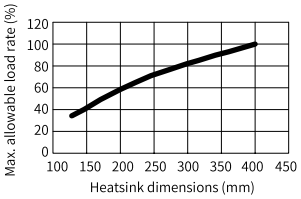
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	198 (223)	63±1	145	4 x φ9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	10.0 (11.9)

4.3.19 MS1H2-30C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	3.0		
Voltage (V)	380		
Rated torque (N·m)	9.8		
Maximum torque (N·m)	29.4		
Rated current (A)	8.9		Heatsink-based derating curve
Maximum current (A)	29		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.25		
Rotor moment of inertia (kg·cm^2)	Motor without brake	6.4±10%	
	Motor with brake	9.38±10%	

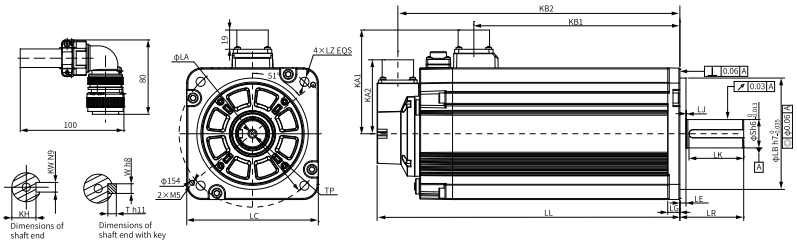
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

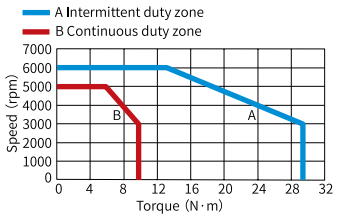
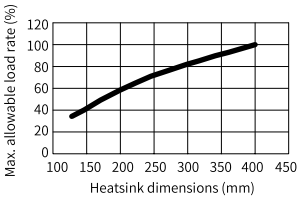
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	198 (223)	63±1	145	4 x φ9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	10.0 (11.9)

4.3.20 MS1H2-30C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	3.0		
Voltage (V)	380		
Rated torque (N·m)	9.8		
Maximum torque (N·m)	29.4		
Rated current (A)	8.9		Heatsink-based derating curve
Maximum current (A)	29		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.25		
Rotor moment of inertia (kg·cm^2)	Motor without brake	6.4±10%	
	Motor with brake	9.38±10%	

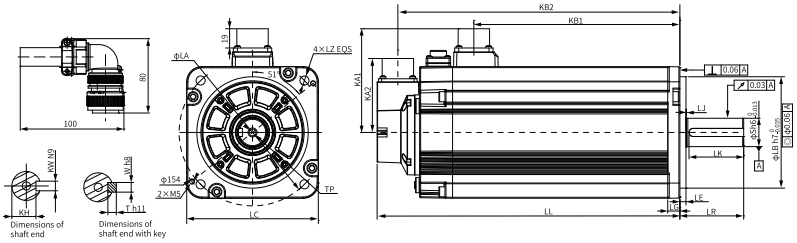
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

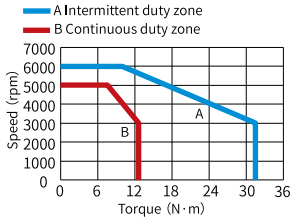
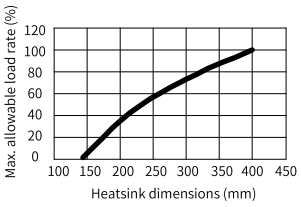
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	198 (223)	63±1	145	4 x φ9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	10.0 (11.9)

4.3.21 MS1H2-40C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	4.0		
Voltage (V)	220		
Rated torque (N·m)	12.6		
Maximum torque (N·m)	31.5		
Rated current (A)	22		Heatsink-based derating curve
Maximum current (A)	67.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.65		
Rotor moment of inertia (kg·cm^2)	Motor without brake	9±10%	
	Motor with brake	11.98±10%	

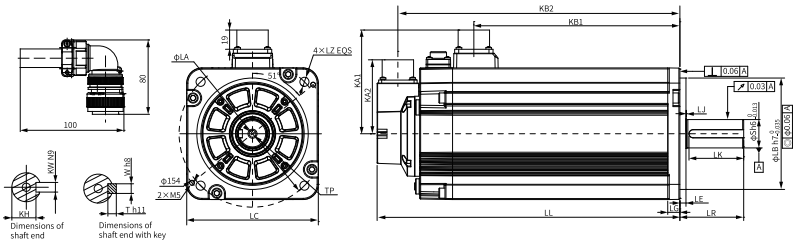
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

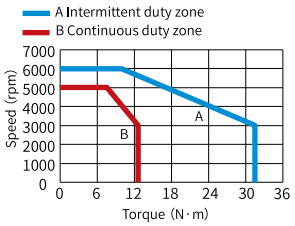
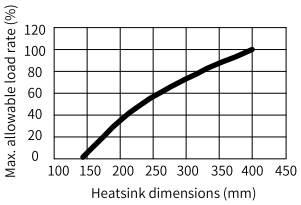
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	236 (261)	63±1	145	4 x φ9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	13.2 (15.1)

4.3.22 MS1H2-40C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	4.0		
Voltage (V)	220		
Rated torque (N·m)	12.6		
Maximum torque (N·m)	31.5		
Rated current (A)	22		Heatsink-based derating curve
Maximum current (A)	67.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.65		
Rotor moment of inertia (kg·cm^2)	Motor without brake	9±10%	
	Motor with brake	11.98±10%	

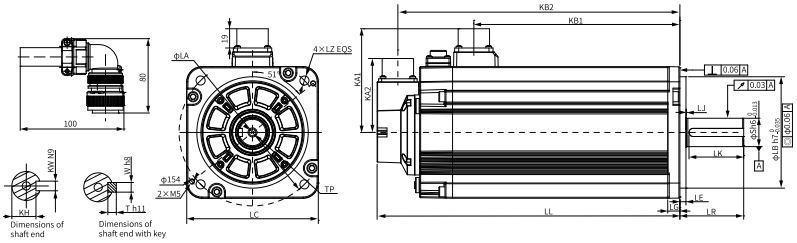
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

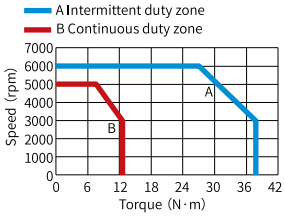
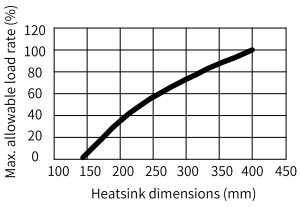
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	236 (261)	63±1	145	4 x φ9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	13.2 (15.1)

4.3.23 MS1H2-40C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	4.0		
Voltage (V)	380		
Rated torque (N·m)	12.6		
Maximum torque (N·m)	37.8		
Rated current (A)	13.5		Heatsink-based derating curve
Maximum current (A)	42.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.06		
Rotor moment of inertia (kg·cm^2)	Motor without brake	9±10%	
	Motor with brake	11.98±10%	

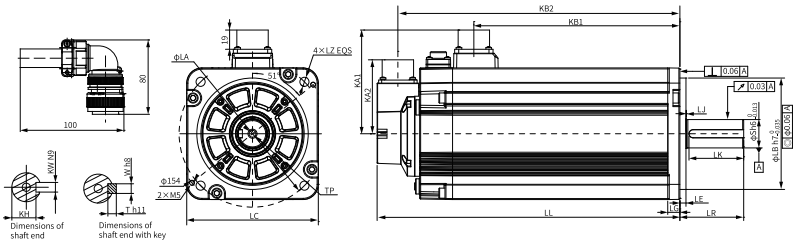
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

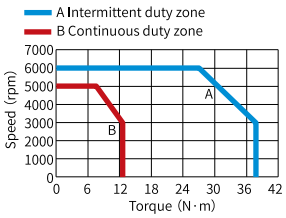
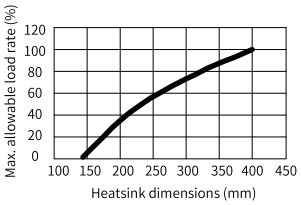
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	236 (261)	63±1	145	4 x φ9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	13.2 (15.1)

4.3.24 MS1H2-40C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	4.0		
Voltage (V)	380		
Rated torque (N·m)	12.6		
Maximum torque (N·m)	37.8		
Rated current (A)	13.5		Heatsink-based derating curve
Maximum current (A)	42.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.06		
Rotor moment of inertia (kg·cm^2)	Motor without brake	9±10%	
	Motor with brake	11.98±10%	

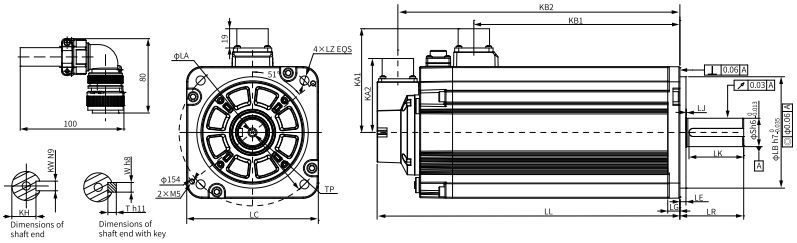
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

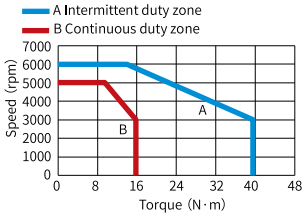
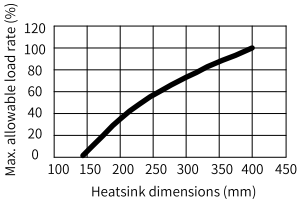
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	236 (261)	63±1	145	4 x φ9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	13.2 (15.1)

4.3.25 MS1H2-50C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	5.0		
Voltage (V)	220		
Rated torque (N·m)	15.8		
Maximum torque (N·m)	39.5		
Rated current (A)	22		Heatsink-based derating curve
Maximum current (A)	67.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.81		
Rotor moment of inertia (kg·cm^2)	Motor without brake	11.6±10%	
	Motor with brake	14.58±10%	

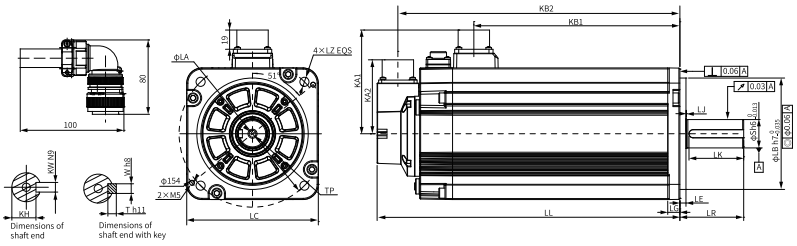
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

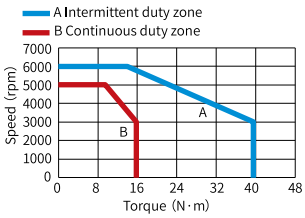
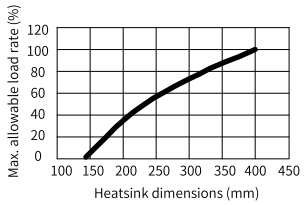
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	274 (299)	63±1	145	4 x φ9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	16.35 (18.25)

4.3.26 MS1H2-50C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	5.0		
Voltage (V)	220		
Rated torque (N·m)	15.8		
Maximum torque (N·m)	39.5		
Rated current (A)	22		Heatsink-based derating curve
Maximum current (A)	67.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	0.81		
Rotor moment of inertia (kg·cm^2)	Motor without brake	11.6±10%	
	Motor with brake	14.58±10%	

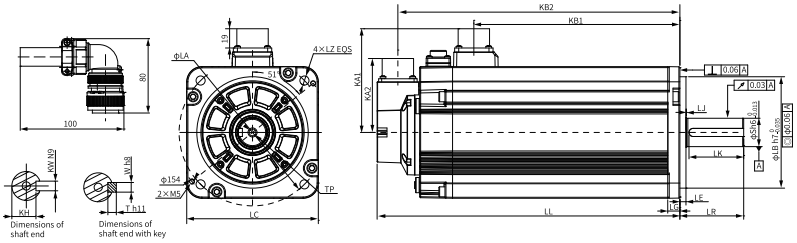
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

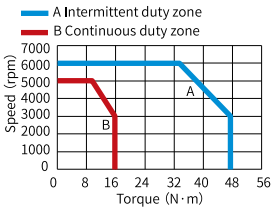
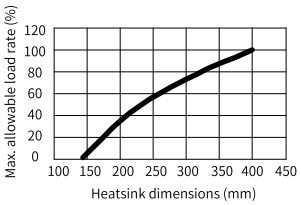
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	274 (299)	63±1	145	4 x φ9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	16.35 (18.25)

4.3.27 MS1H2-50C30CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	5.0		
Voltage (V)	380		
Rated torque (N·m)	15.8		
Maximum torque (N·m)	47.4		
Rated current (A)	17		Heatsink-based derating curve
Maximum current (A)	52.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.04		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	11.6±10%	
	Motor with brake	14.58±10%	

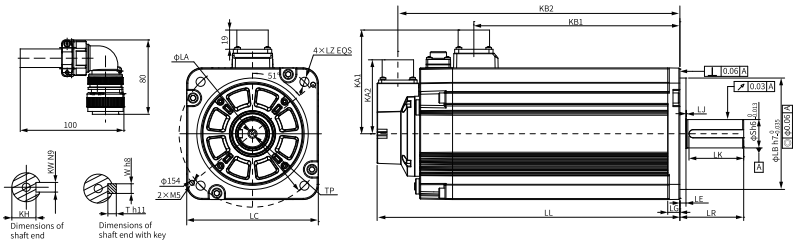
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

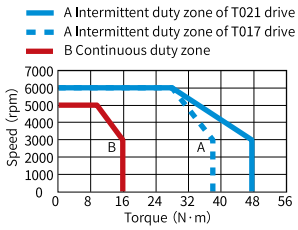
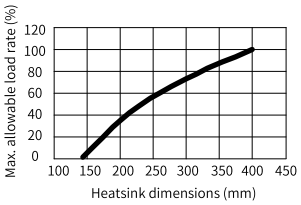
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	274 (299)	63±1	145	4 x φ9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	16.35 (18.25)

4.3.28 MS1H2-50C30CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Low inertia, medium capacity		
Rated power (kW)	5.0		
Voltage (V)	380		
Rated torque (N·m)	15.8		
Maximum torque (N·m)	47.4		
Rated current (A)	17		Heatsink-based derating curve
Maximum current (A)	52.5		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	6000		
Torque coefficient (N·m/A)	1.04		
Rotor moment of inertia (kg·cm^2)	Motor without brake	11.6±10%	
	Motor with brake	14.58±10%	

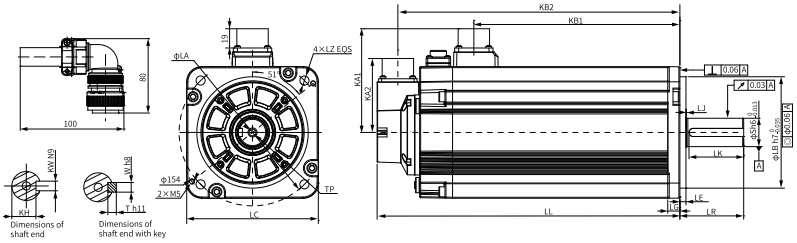
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil resistance (Ω) (±7%)	Exciting current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
63	⩽ 1176	⩽ 392

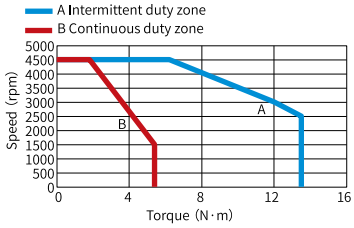
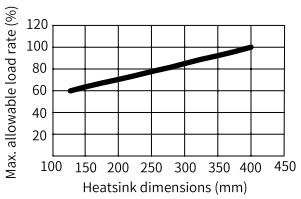
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	274 (299)	63±1	145	4 x φ9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		28	M8 x 20	54	24$^{0}_{-0.2}$	8	8	7	16.35 (18.25)

4.4 MS1H3 Series Motor with Medium Inertia and Medium Capacity

4.4.1 MS1H3-85B15CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	0.85		
Voltage (V)	220		
Rated torque (N·m)	5.39		
Maximum torque (N·m)	13.5		
Rated current (A)	6.6		Heatsink-based derating curve
Maximum current (A)	17.2		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	0.93		
Rotor moment of inertia (kg·cm^2)	Motor without brake	13.56±10%	
	Motor with brake	15.8±10%	

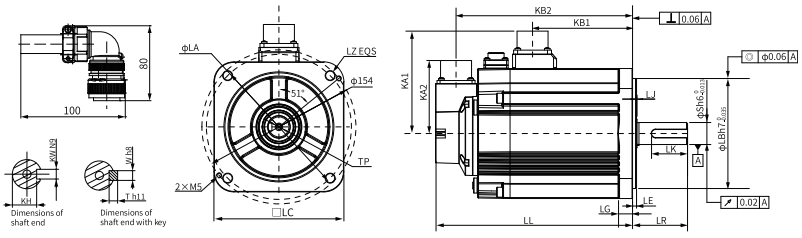
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

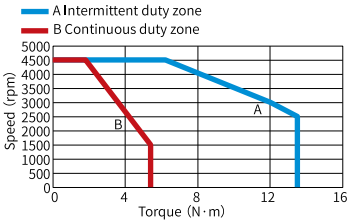
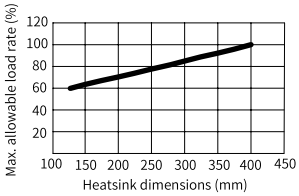
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	142 (167)	55±1	145	4 x ϕ9	103	70	73	121.5 (146.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	5.8 (7.7)

4.4.2 MS1H3-85B15CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	0.85		
Voltage (V)	220		
Rated torque (N·m)	5.39		
Maximum torque (N·m)	13.5		
Rated current (A)	6.6		Heatsink-based derating curve
Maximum current (A)	17.2		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	0.93		
Rotor moment of inertia (kg·cm^2)	Motor without brake	13.56±10%	
	Motor with brake	15.8±10%	

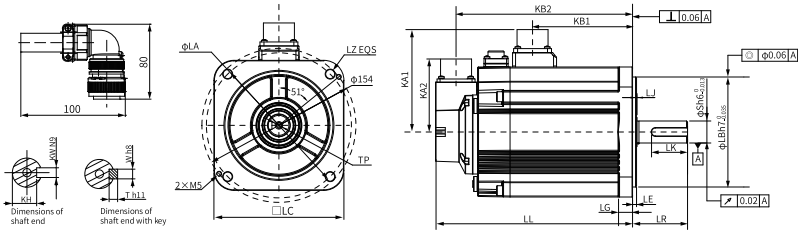
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

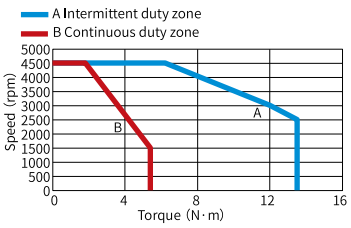
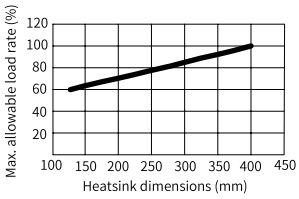
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	142 (167)	55±1	145	4 x φ9	103	70	73	121.5 (146.5)	14	4

LJ	LB	S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi110h7^{0}_{-0.035}$	22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	5.8 (7.7)

4.4.3 MS1H3-85B15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	0.85		
Voltage (V)	380		
Rated torque (N·m)	5.39		
Maximum torque (N·m)	13.5		
Rated current (A)	3.5		Heatsink-based derating curve
Maximum current (A)	8.5		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.84		
Rotor moment of inertia (kg·cm^2)	Motor without brake	13.56±10%	
	Motor with brake	15.8±10%	

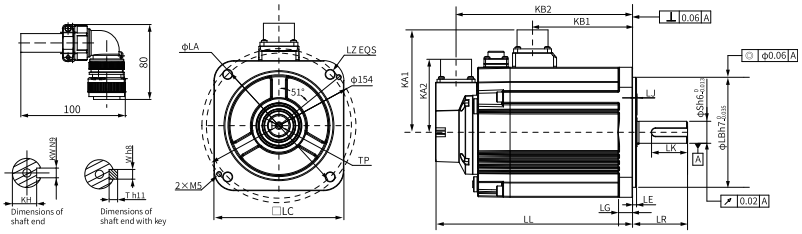
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

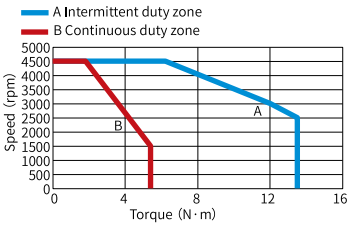
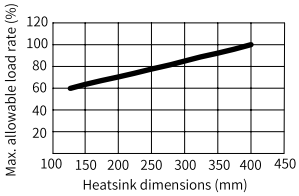
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	142 (167)	55±1	145	4 x φ9	103	70	73	121.5 (146.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	5.8 (7.7)

4.4.4 MS1H3-85B15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	0.85		
Voltage (V)	380		
Rated torque (N·m)	5.39		
Maximum torque (N·m)	13.5		
Rated current (A)	3.5		Heatsink-based derating curve
Maximum current (A)	8.5		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.84		
Rotor moment of inertia (kg·cm^2)	Motor without brake	13.56±10%	
	Motor with brake	15.8±10%	

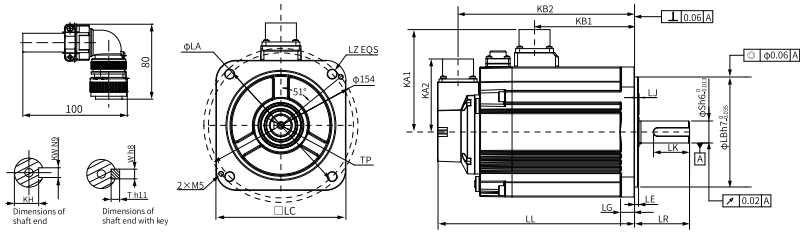
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

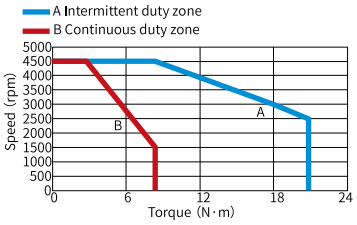
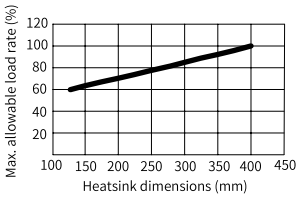
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	142 (167)	55±1	145	4 x φ9	103	70	73	121.5 (146.5)	14	4

LJ	LB	S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi110h7^{0}_{-0.035}$	22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	5.8 (7.7)

4.4.5 MS1H3-13C15CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.3		
Voltage (V)	220		
Rated torque (N·m)	8.34		
Maximum torque (N·m)	20.85		
Rated current (A)	10.5		Heatsink-based derating curve
Maximum current (A)	27.3		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	0.89		
Rotor moment of inertia (kg·cm^2)	Motor without brake	19.25±10%	
	Motor with brake	21.5±10%	

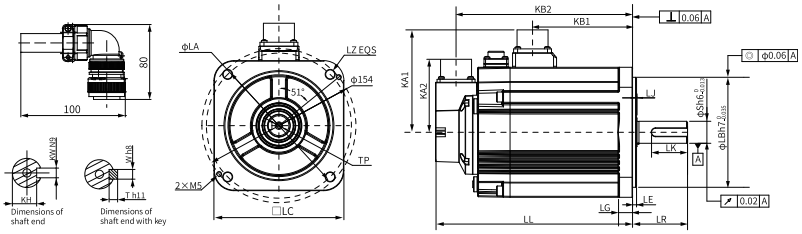
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

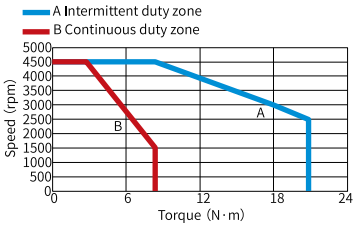
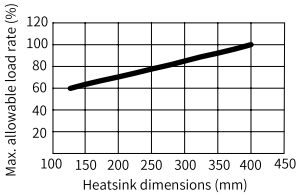
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	157 (182)	55±1	145	4 x φ9	103	85	73	136.5 (161.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	7.1 (8.9)

4.4.6 MS1H3-13C15CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.3		
Voltage (V)	220		
Rated torque (N·m)	8.34		
Maximum torque (N·m)	20.85		
Rated current (A)	10.5		Heatsink-based derating curve
Maximum current (A)	27.3		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	0.89		
Rotor moment of inertia (kg·cm^2)	Motor without brake	19.25±10%	
	Motor with brake	21.5±10%	

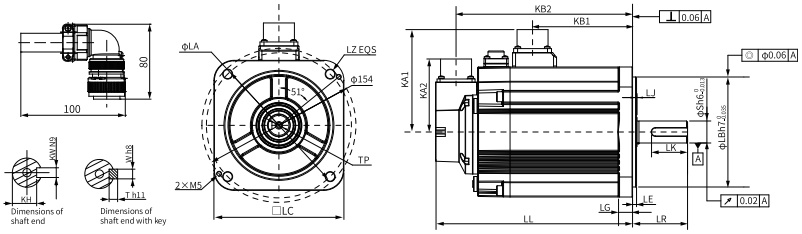
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

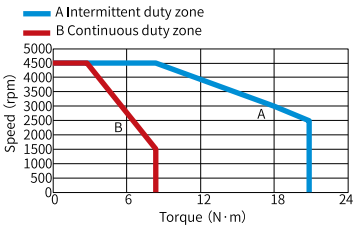
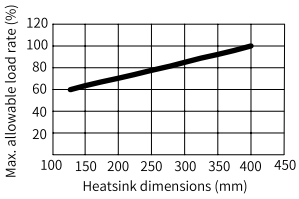
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	157 (182)	55±1	145	4 x φ9	103	85	73	136.5 (161.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	7.1 (8.9)

4.4.7 MS1H3-13C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.3		
Voltage (V)	380		
Rated torque (N·m)	8.34		
Maximum torque (N·m)	20.85		
Rated current (A)	5.1		Heatsink-based derating curve
Maximum current (A)	12.6		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.85		
Rotor moment of inertia (kg·cm^2)	Motor without brake	19.25±10%	
	Motor with brake	21.5±10%	

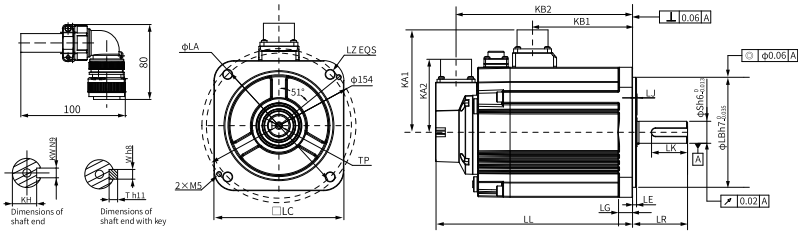
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

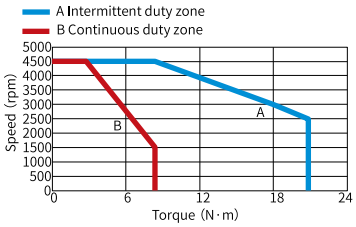
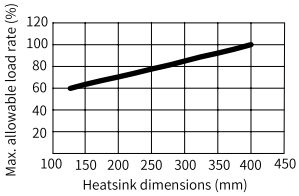
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	157 (182)	55±1	145	4 x φ9	103	85	73	136.5 (161.5)	14	4

LJ	LB	S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi 110h7^{0}_{-0.035}$	22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	7.1 (8.9)

4.4.8 MS1H3-13C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.3		
Voltage (V)	380		
Rated torque (N·m)	8.34		
Maximum torque (N·m)	20.85		
Rated current (A)	5.1		Heatsink-based derating curve
Maximum current (A)	12.6		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.85		
Rotor moment of inertia (kg·cm^2)	Motor without brake	19.25±10%	
	Motor with brake	21.5±10%	

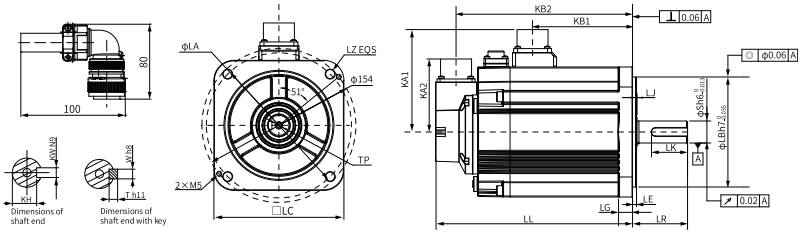
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

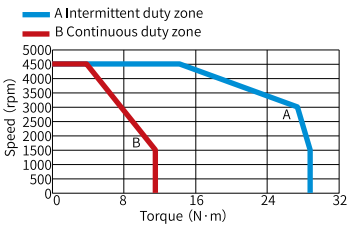
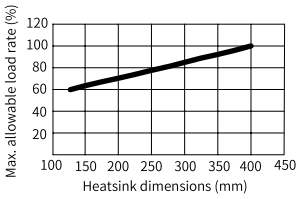
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	157 (182)	55±1	145	4 x φ9	103	85	73	136.5 (161.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	7.1 (8.9)

4.4.9 MS1H3-18C15CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.8		
Voltage (V)	220		
Rated torque (N·m)	11.5		
Maximum torque (N·m)	28.75		
Rated current (A)	11.9		Heatsink-based derating curve
Maximum current (A)	32.2		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.09		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	24.9±10%	
	Motor with brake	27.2±10%	

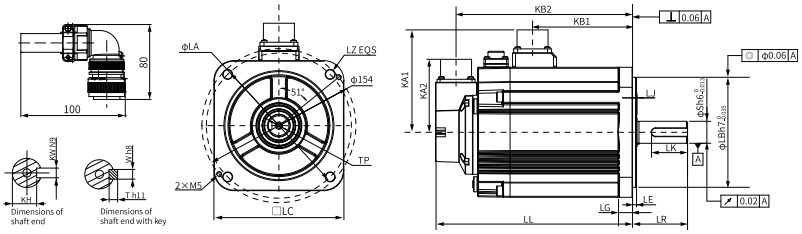
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

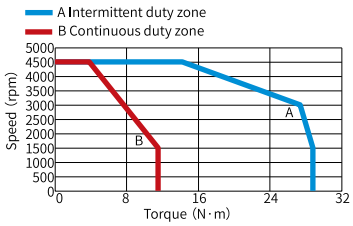
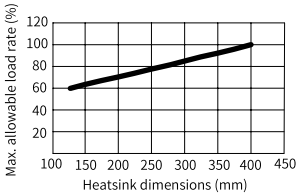
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	172 (197)	55±1	145	4 x φ9	103	100	73	151.5 (176.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi 110h7^{0}_{-0.035}$		22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	8.5 (10.3)

4.4.10 MS1H3-18C15CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.8		
Voltage (V)	220		
Rated torque (N·m)	11.5		
Maximum torque (N·m)	28.75		
Rated current (A)	11.9		Heatsink-based derating curve
Maximum current (A)	32.2		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.09		
Rotor moment of inertia (kg·cm^2)	Motor without brake	24.9±10%	
	Motor with brake	27.2±10%	

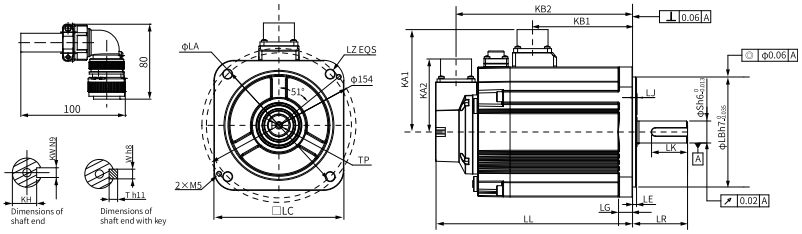
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

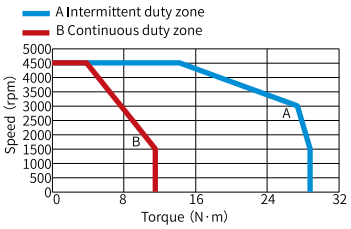
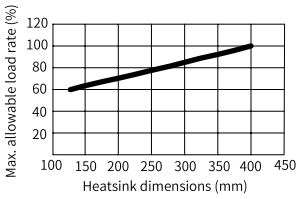
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	172 (197)	55±1	145	4 x φ9	103	100	73	151.5 (176.5)	14	4

LJ	LB	S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi 110h7^{0}_{-0.035}$	22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	8.5 (10.3)

4.4.11 MS1H3-18C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.8		
Voltage (V)	380		
Rated torque (N·m)	11.5		
Maximum torque (N·m)	28.75		
Rated current (A)	6.75		Heatsink-based derating curve
Maximum current (A)	17.7		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.87		
Rotor moment of inertia (kg·cm^2)	Motor without brake	24.9±10%	
	Motor with brake	27.2±10%	

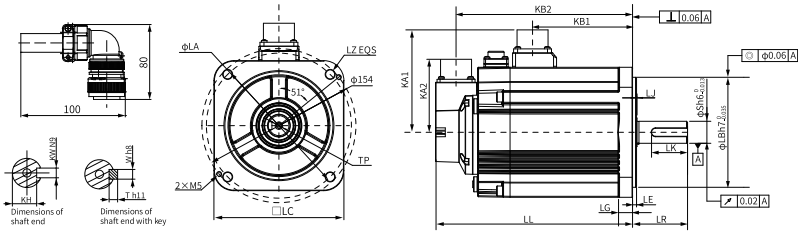
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

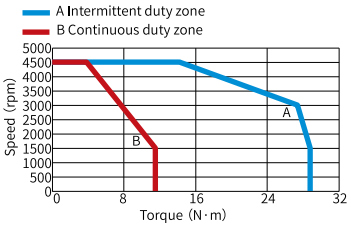
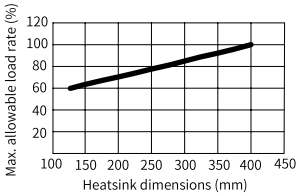
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	172 (197)	55±1	145	4 x φ9	103	100	73	151.5 (176.5)	14	4
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	φ110h7$^{0}_{-0.035}$		22	M6 x 20	36	18$^{0}_{-0.2}$	8	8	7	8.5 (10.3)

4.4.12 MS1H3-18C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	130		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	1.8		
Voltage (V)	380		
Rated torque (N·m)	11.5		
Maximum torque (N·m)	28.75		
Rated current (A)	6.75		Heatsink-based derating curve
Maximum current (A)	17.7		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.87		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	24.9±10%	
	Motor with brake	27.2±10%	

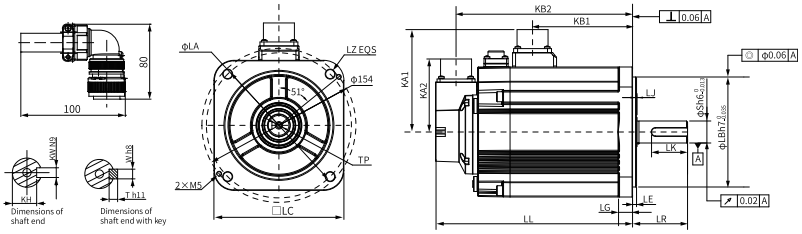
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
16	24	24	24	1	⩽ 120	⩽ 60	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
55	⩽ 686	⩽ 196

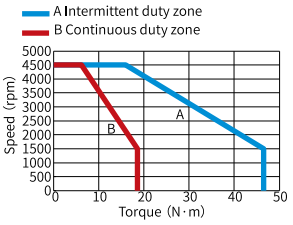
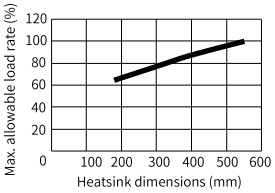
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
130	172 (197)	55±1	145	4 x φ9	103	100	73	151.5 (176.5)	14	4

LJ	LB	S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi 110h7^{0}_{-0.035}$	22	M6 x 20	36	$18^{0}_{-0.2}$	8	8	7	8.5 (10.3)

4.4.13 MS1H3-29C15CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	2.9		
Voltage (V)	220		
Rated torque (N·m)	18.6		
Maximum torque (N·m)	46.5		
Rated current (A)	18		Heatsink-based derating curve
Maximum current (A)	52.5		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.16		
Rotor moment of inertia (kg·cm^2)	Motor without brake	44.7±10%	
	Motor with brake	52.35±10%	

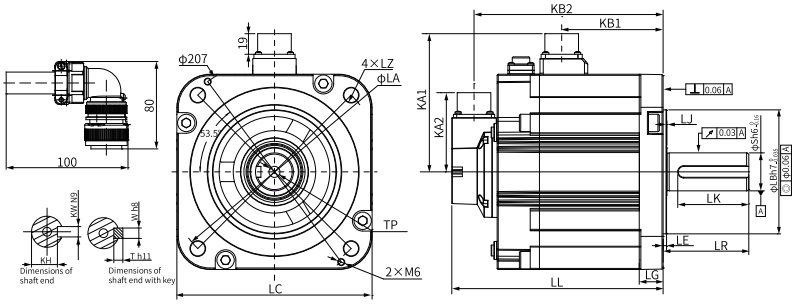
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

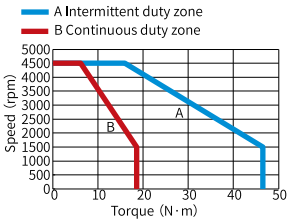
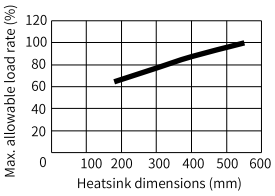
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	161 (194.8)	79±1	200	4 x ϕ13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	13.8 (17.9)

4.4.14 MS1H3-29C15CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	2.9		
Voltage (V)	220		
Rated torque (N·m)	18.6		
Maximum torque (N·m)	46.5		
Rated current (A)	18		Heatsink-based derating curve
Maximum current (A)	52.5		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.16		
Rotor moment of inertia (kg·cm^2)	Motor without brake	44.7±10%	
	Motor with brake	52.35±10%	

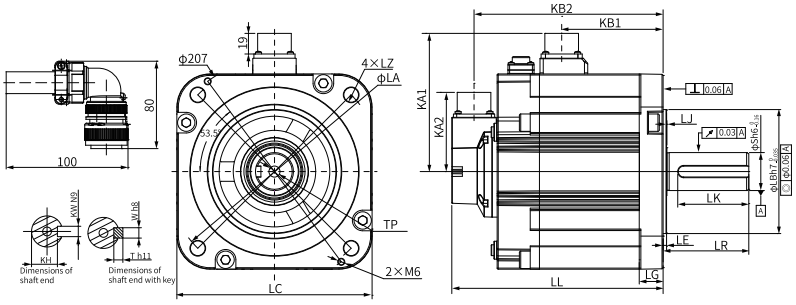
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

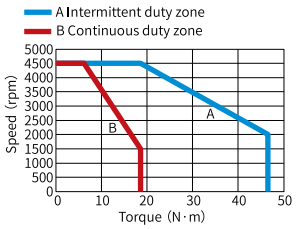
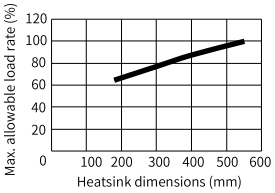
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	161 (194.8)	79±1	200	4 x ϕ13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	13.8 (17.9)

4.4.15 MS1H3-29C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	2.9		
Voltage (V)	380		
Rated torque (N·m)	18.6		
Maximum torque (N·m)	46.5		
Rated current (A)	10.5		Heatsink-based derating curve
Maximum current (A)	29.75		
Rated speed (rpm)	1500		
Maximum speed (rpm)	4500		
Torque coefficient (N·m/A)	1.94		
Rotor moment of inertia (kg·cm^2)	Motor without brake	44.7±10%	
	Motor with brake	52.35±10%	

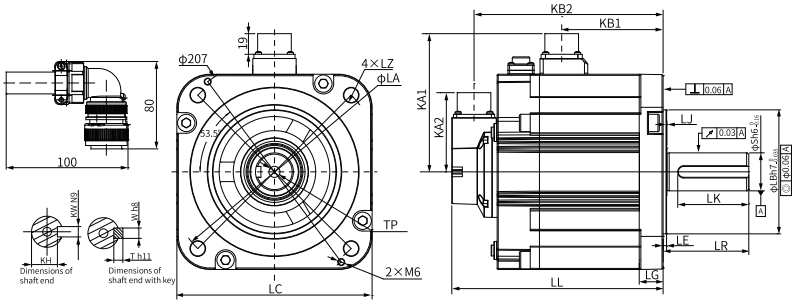
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

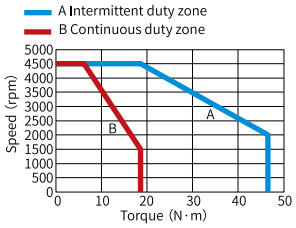
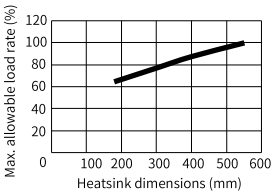
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	161 (194.8)	79±1	200	4 x ϕ13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	13.8 (17.9)

4.4.16 MS1H3-29C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	2.9		
Voltage (V)	380		
Rated torque (N·m)	18.6		
Maximum torque (N·m)	46.5		
Rated current (A)	10.5		Heatsink-based derating curve
Maximum current (A)	29.75		
Rated speed (rpm)	1500		
Maximum speed (rpm)	4500		
Torque coefficient (N·m/A)	1.94		
Rotor moment of inertia (kg·cm^2)	Motor without brake	44.7±10%	
	Motor with brake	52.35±10%	

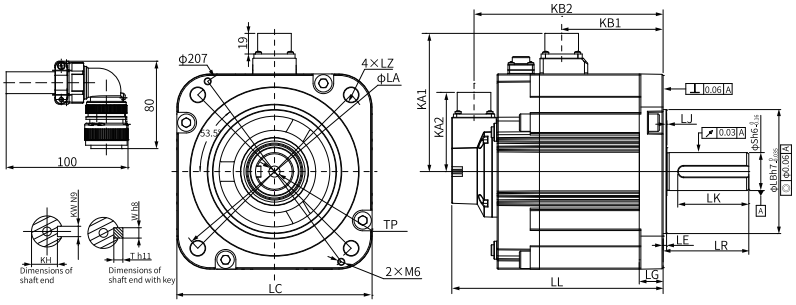
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

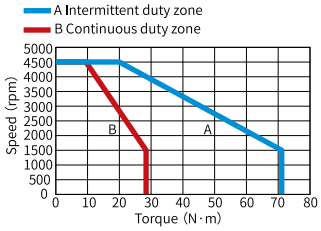
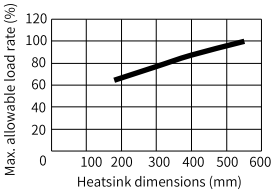
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	161 (194.8)	79±1	200	4 x ϕ13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	13.8 (17.9)

4.4.17 MS1H3-44C15CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	4.4		
Voltage (V)	220		
Rated torque (N·m)	28.4		
Maximum torque (N·m)	71.1		
Rated current (A)	25.5		Heatsink-based derating curve
Maximum current (A)	67		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.25		
Rotor moment of inertia (kg·cm^2)	Motor without brake	64.9±10%	
	Motor with brake	72.55±10%	

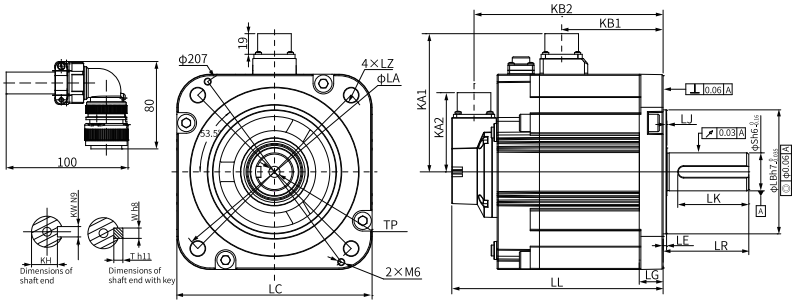
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

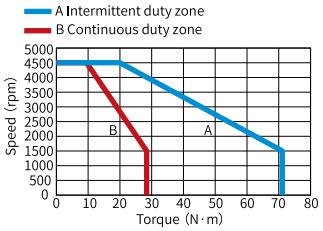
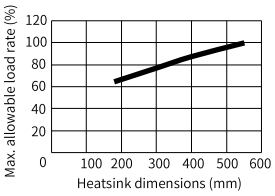
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	184.5 (218.3)	79±1	200	4 x ϕ13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	17.4 (21.9)

4.4.18 MS1H3-44C15CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	4.4		
Voltage (V)	220		
Rated torque (N·m)	28.4		
Maximum torque (N·m)	71.1		
Rated current (A)	25.5		Heatsink-based derating curve
Maximum current (A)	67		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.25		
Rotor moment of inertia (kg·cm^2)	Motor without brake	64.9±10%	
	Motor with brake	72.55±10%	

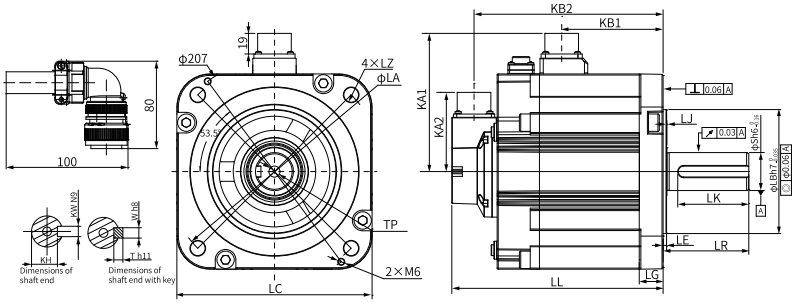
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

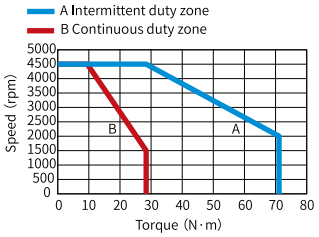
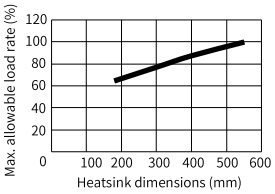
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	184.5 (218.3)	79±1	200	4 x ϕ13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	17.4 (21.9)

4.4.19 MS1H3-44C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	4.4		
Voltage (V)	380		
Rated torque (N·m)	28.4		
Maximum torque (N·m)	71.1		
Rated current (A)	16		Heatsink-based derating curve
Maximum current (A)	42		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.96		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	64.9±10%	
	Motor with brake	72.55±10%	

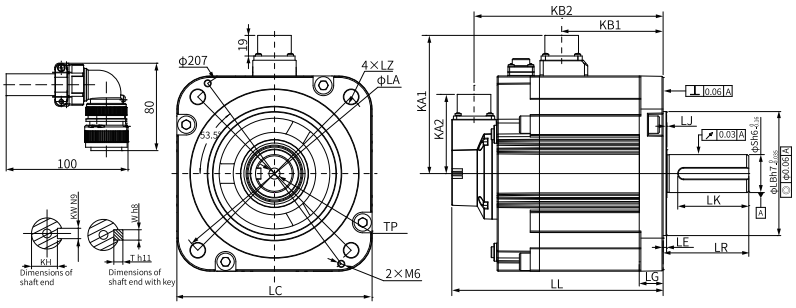
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

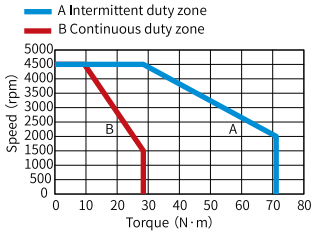
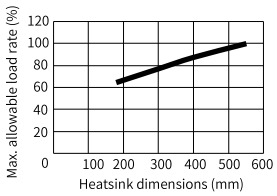
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	184.5 (218.3)	79±1	200	4 x ϕ13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	$\phi 114.3h7^{0}_{-0.035}$		35	M12 x 25	65	$30^{0}_{-0.2}$	10	10	8	17.4 (21.6)

4.4.20 MS1H3-44C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	4.4		
Voltage (V)	380		
Rated torque (N·m)	28.4		
Maximum torque (N·m)	71.1		
Rated current (A)	16		Heatsink-based derating curve
Maximum current (A)	42		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.96		
Rotor moment of inertia (kg·cm^2)	Motor without brake	64.9±10%	
	Motor with brake	72.55±10%	

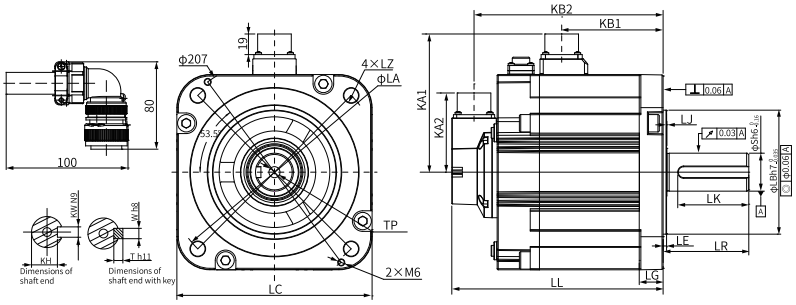
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

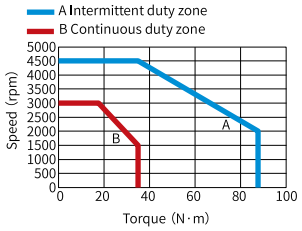
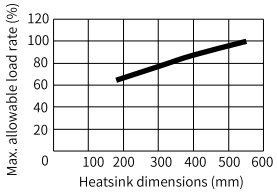
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
79	⩽ 1470	⩽ 490

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	184.5 (218.3)	79±1	200	4 x ϕ13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		35	M12 x 25	65	30$^{0}_{-0.2}$	10	10	8	17.4 (21.6)

4.4.21 MS1H3-55C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	5.5		
Voltage (V)	380		
Rated torque (N·m)	35		
Maximum torque (N·m)	87.6		
Rated current (A)	20.7		Heatsink-based derating curve
Maximum current (A)	52		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.92		
Rotor moment of inertia (kg·cm^2)	Motor without brake	86.9±10%	
	Motor with brake	94.55±10%	

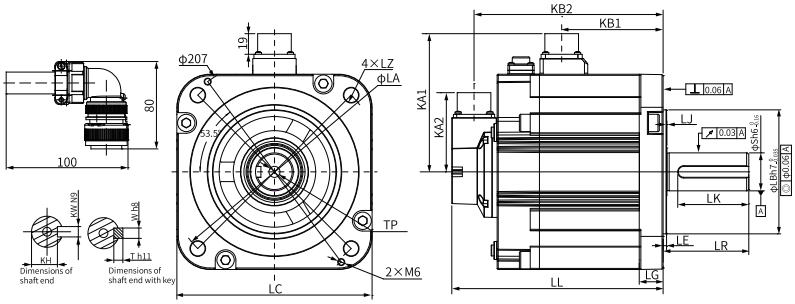
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

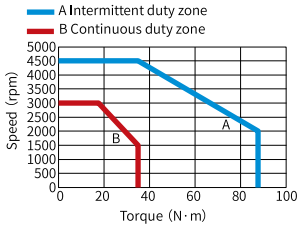
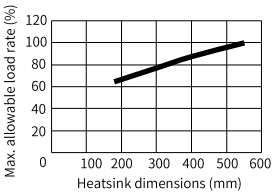
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
113	⩽ 1764	⩽ 588

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	208 (241.8)	113±1	200	4 x ϕ13.5	127.4	140.5	73	187.5 (221.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		42	M16 x 32	97	37$^{0}_{-0.2}$	12	12	8	21.7 (25.9)

4.4.22 MS1H3-55C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	5.5		
Voltage (V)	380		
Rated torque (N·m)	35		
Maximum torque (N·m)	87.6		
Rated current (A)	20.7		Heatsink-based derating curve
Maximum current (A)	52		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	1.92		
Rotor moment of inertia (kg·cm^2)	Motor without brake	86.9±10%	
	Motor with brake	94.55±10%	

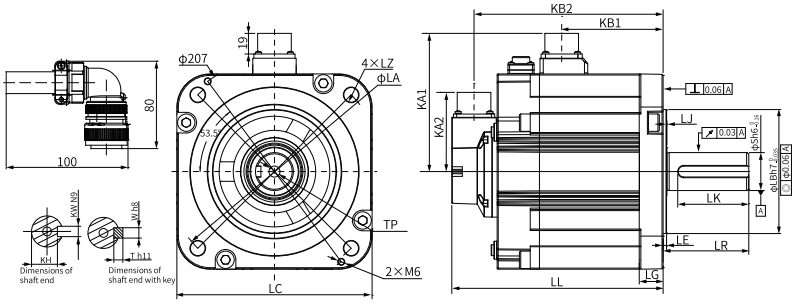
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

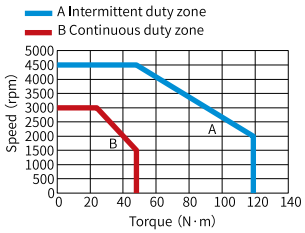
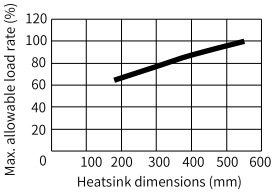
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
113	⩽ 1764	⩽ 588

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	208 (241.8)	113±1	200	4 x ϕ13.5	127.4	140.5	73	187.5 (221.3)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		42	M16 x 32	97	37$^{0}_{-0.2}$	12	12	8	21.7 (25.9)

4.4.23 MS1H3-75C15CD-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	7.5		
Voltage (V)	380		
Rated torque (N·m)	48		
Maximum torque (N·m)	119		
Rated current (A)	25		Heatsink-based derating curve
Maximum current (A)	65		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	2.13		
Rotor moment of inertia (kg·cm^2)	Motor without brake	127.5±10%	
	Motor with brake	135.15±10%	

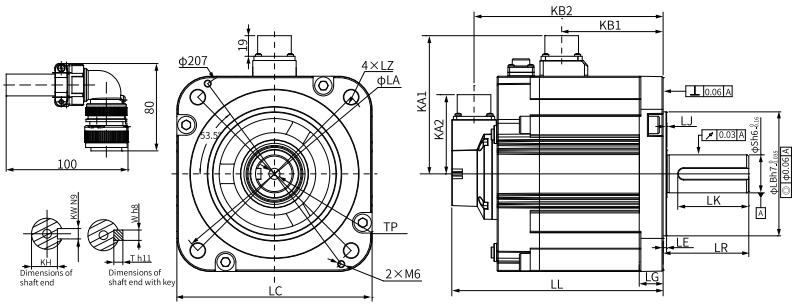
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

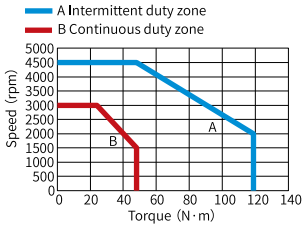
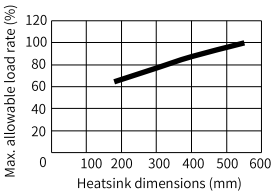
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
113	⩽ 1764	⩽ 588

Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	255 (288.8)	113±1	200	4 x ϕ13.5	127.4	187.5	73	234.5 (234.5)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		42	M16 x 32	97	37$^{0}_{-0.2}$	12	12	8	29 (33.2)

4.4.24 MS1H3-75C15CD-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	180		
Inertia, capacity	Medium inertia, medium capacity		
Rated power (kW)	7.5		
Voltage (V)	380		
Rated torque (N·m)	48		
Maximum torque (N·m)	119		
Rated current (A)	25		Heatsink-based derating curve
Maximum current (A)	65		
Rated speed (rpm)	1500		
Maximum Speed (rpm)	4500		
Torque coefficient (N·m/A)	2.13		
Rotor moment of inertia (kg·cm^2)	Motor without brake	127.5±10%	
	Motor with brake	135.15±10%	

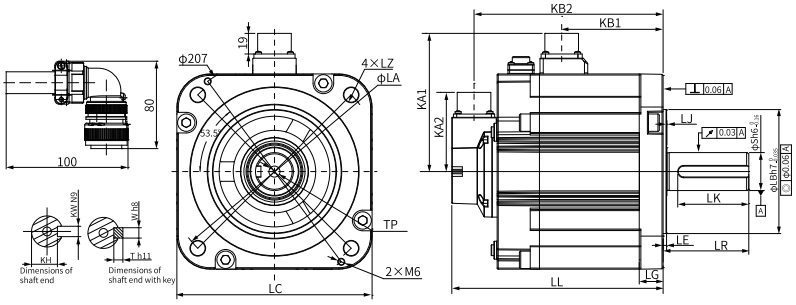
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
50	24	31	18.58	1.29	⩽ 200	⩽ 100	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
113	⩽ 1764	⩽ 588

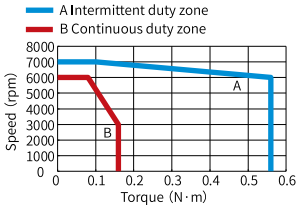
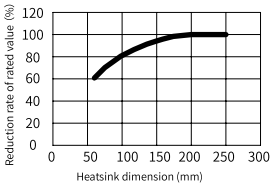
Dimensions (mm)



LC	LL	LR	LA	LZ	KA1	KB1	KA2	KB2	LG	LE
180	255 (288.8)	113±1	200	4 x ϕ13.5	127.4	187.5	73	234.5 (234.5)	22	3.2±0.3
LJ	LB		S	TP	LK	KH	kW	W	T	Weight (kg)
0.5±0.75	ϕ114.3h7$^{0}_{-0.035}$		42	M16 x 32	97	37$^{0}_{-0.2}$	12	12	8	29 (33.2)

4.5 MS1H4 Series Motor with Medium Inertia and Small Capacity

4.5.1 MS1H4-05B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Medium inertia, low capacity		
Rated output (kW)	0.05		
Voltage (V)	220		
Rated torque (N·m)	0.16		
Maximum torque (N·m)	0.56		
Rated current (A)	1.27		Heatsink-based derating curve
Maximum current (A)	4.78		
Rated speed (rpm)	3000		
Maximum speed (rpm)	7000		
Torque coefficient (N·m/A)	0.15		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.038±10%	
	Motor with brake	0.04±10%	

Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

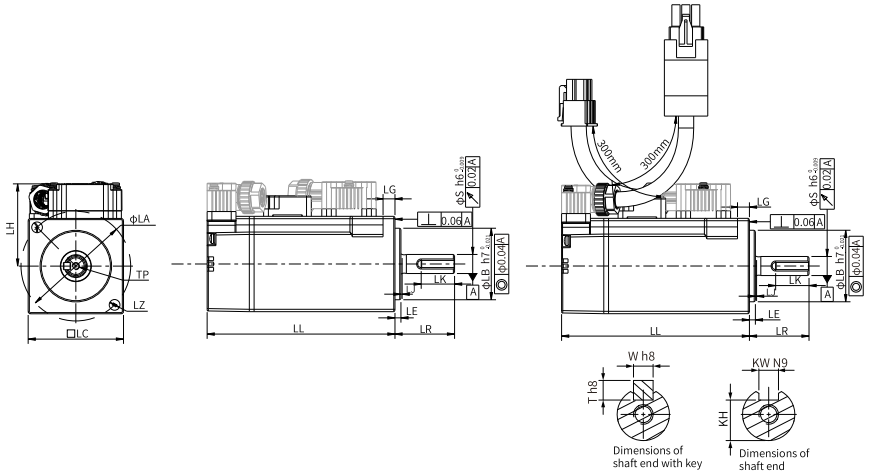


Figure 4-1 MS1H4-05B30CB-A6/S630R and MS1H4-05B30CB-A6/S632R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
51 (78.3)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.24 (0.40)

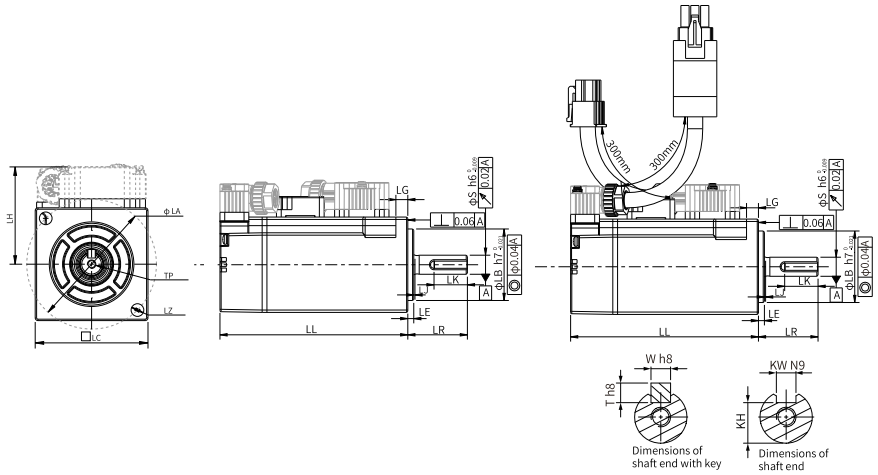
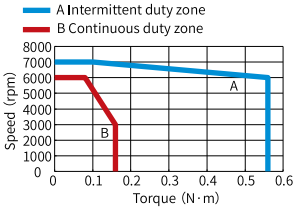
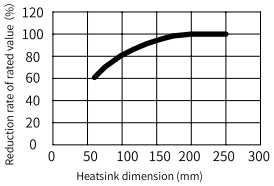


Figure 4-2 MS1H4-05B30CB-A6/S631R and MS1H4-05B30CB-A6/S634R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
53.7 (81)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.26 (0.42)

4.5.2 MS1H4-05B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Medium inertia, low capacity		
Rated output (kW)	0.05		
Voltage (V)	220		
Rated torque (N·m)	0.16		
Maximum torque (N·m)	0.56		
Rated current (A)	1.27		Heatsink-based derating curve
Maximum current (A)	4.78		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.15		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.038±10%	
	Motor with brake	0.04±10%	

Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

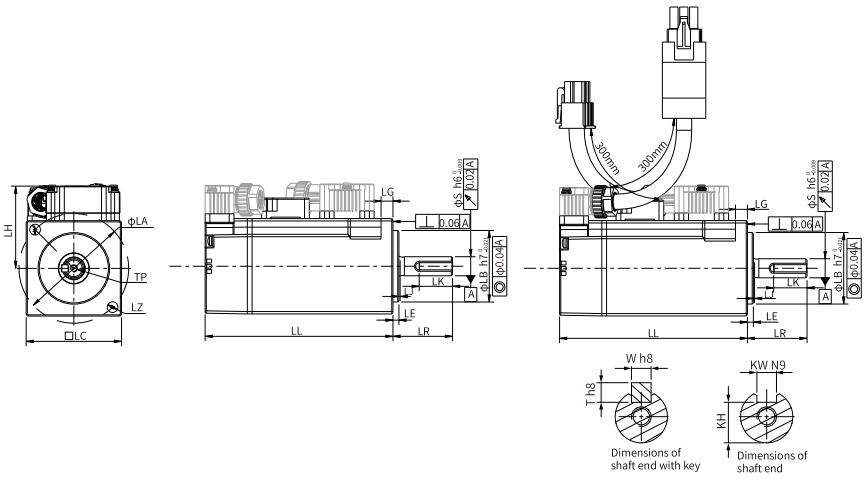


Figure 4-3 MS1H4-05B30CB-A330R and MS1H4-05B30CB-A332R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
51 (78.3)	40	25±0.5	46	2 x φ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.24 (0.40)

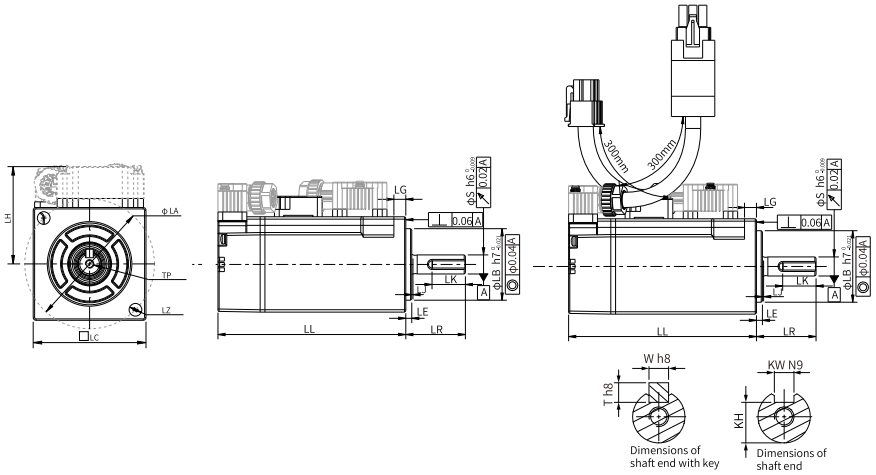
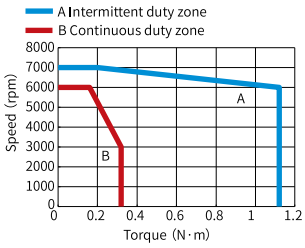
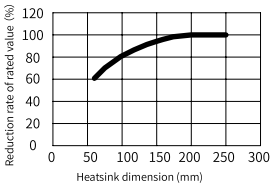


Figure 4-4 MS1H4-05B30CB-A331R and MS1H4-05B30CB-A334R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
53.7 (81)	40	25±0.5	46	2 x φ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.26 (0.42)

4.5.3 MS1H4-10B30CB-A6/S63*R-INT

Motor specifications		Torque-Speed characteristics
Frame size (mm)	40	
Inertia, capacity	Medium inertia, low capacity	
Rated output (kW)	0.1	
Voltage (V)	220	
Rated torque (N·m)	0.32	
Maximum torque (N·m)	1.12	
Rated current (A)	1.27	Heatsink-based derating curve

Motor specifications			Torque-Speed characteristics
Maximum current (A)	4.78		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.29		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.072±10%	
	Motor with brake	0.074±10%	

Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

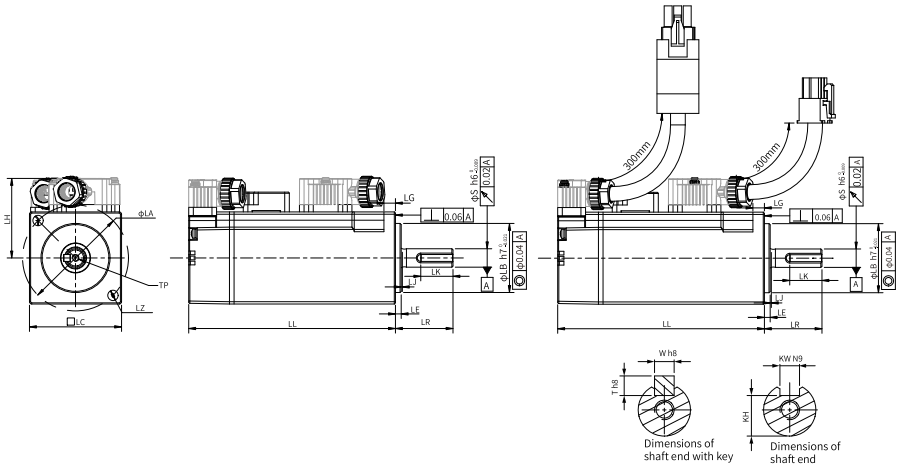


Figure 4-5 MS1H4-10B30CB-A6/S630R and MS1H4-10B30CB-A6/S632R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
62 (89.3)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.32 (0.48)

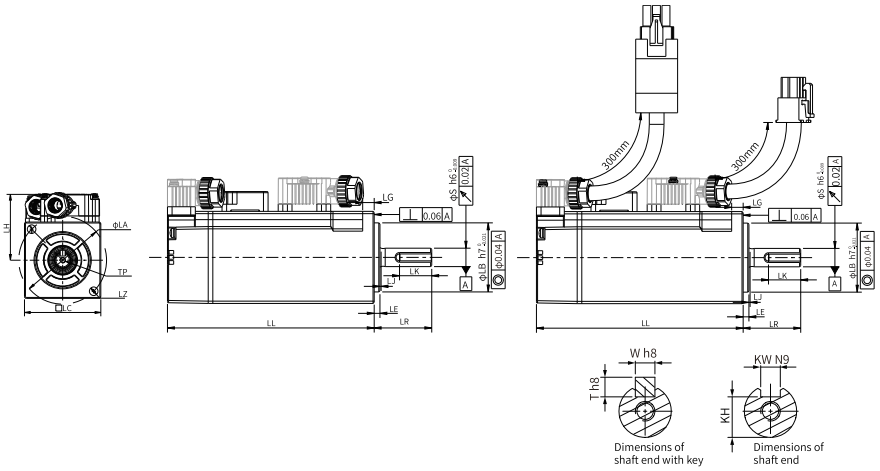
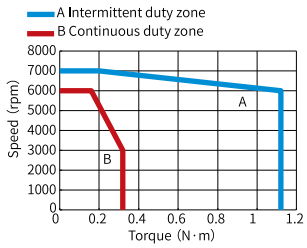
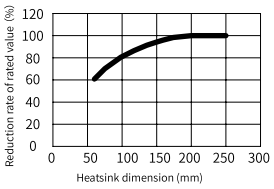


Figure 4-6 MS1H4-10B30CB-A6/S631R and MS1H4-10B30CB-A6/S634R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
64.7 (92)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.34 (0.50)

4.5.4 MS1H4-10B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	40		
Inertia, capacity	Medium inertia, low capacity		
Rated output (kW)	0.1		
Voltage (V)	220		
Rated torque (N·m)	0.32		
Maximum torque (N·m)	1.12		
Rated current (A)	1.27		Heatsink-based derating curve
Maximum current (A)	4.78		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.29		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.072±10%	
	Motor with brake	0.074±10%	

Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
0.32	24	6.9	83.5	0.29	⩽ 40	⩽ 20	⩽ 1.5

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
20	⩽ 78	⩽ 54

Dimensions (mm)

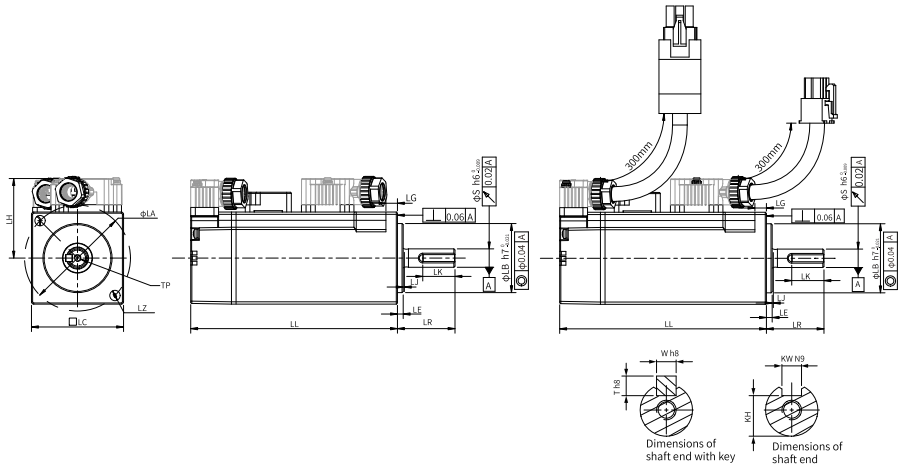


Figure 4-7 MS1H4-10B30CB-A330R and MS1H4-10B30CB-A332R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
62 (89.3)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.32 (0.48)

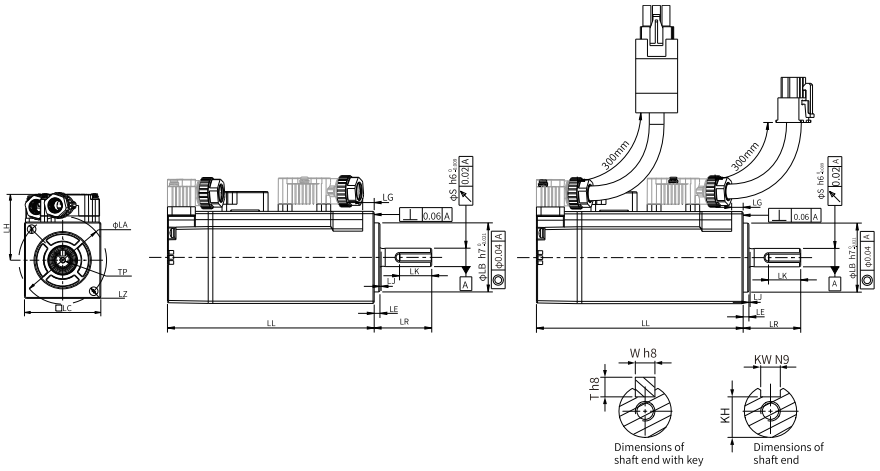
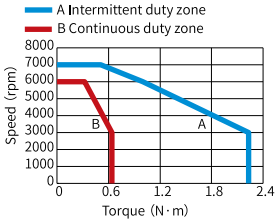
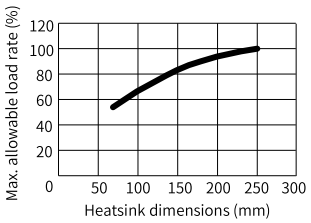


Figure 4-8 MS1H4-10B30CB-A331R and MS1H4-10B30CB-A334R

LL	LC	LR	LA	LZ	LH	LG	LE	LJ
64.7 (92)	40	25±0.5	46	2 x ϕ4.5	34.5	5	2.5±0.5	0.5±0.35
S	LB	TP	LK	KH	kW	W	T	Weight (kg)
8	$\phi 30h7^{0}_{-0.021}$	M3 x 6	14	$6.2^{0}_{-0.1}$	3	3	3	0.34 (0.50)

4.5.5 MS1H4-20B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.2		
Voltage (V)	220		
Rated torque (N·m)	0.64		
Maximum torque (N·m)	2.24		
Rated current (A)	1.3		Heatsink-based derating curve
Maximum current (A)	5.3		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.55		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.22±10%	
	Motor with brake	0.23±10%	

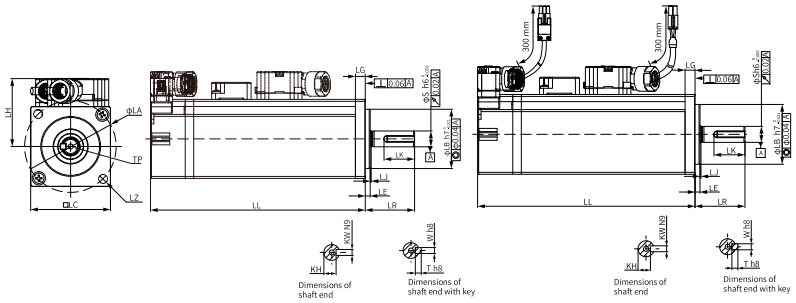
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1.5

Allowable load

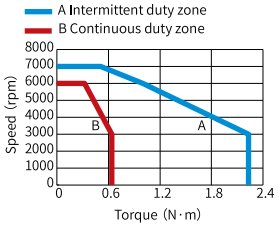
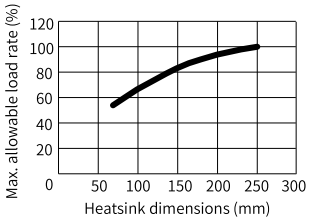
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	73.5 (101.1)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50h7^{0}_{-0.025}$	14	M5 x 8	16.5	$11^{0}_{-0.1}$	5	5	5	0.78 (1.16)

4.5.6 MS1H4-20B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.2		
Voltage (V)	220		
Rated torque (N·m)	0.64		
Maximum torque (N·m)	2.24		
Rated current (A)	1.3		Heatsink-based derating curve
Maximum current (A)	5.3		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.55		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.22±10%	
	Motor with brake	0.23±10%	

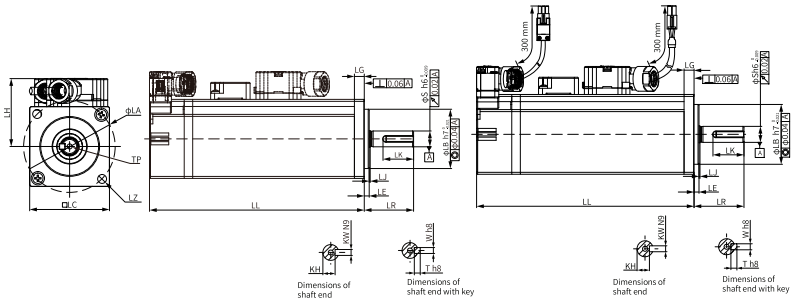
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1.5

Allowable load

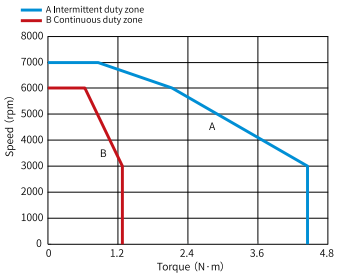
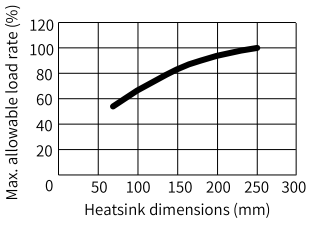
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	73.5 (101.1)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50 h7^{0}_{-0.025}$	14	M5 x 8	16.5	$11^{0}_{-0.1}$	5	5	5	0.78 (1.16)

4.5.7 MS1H4-40B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.4		
Voltage (V)	220		
Rated torque (N·m)	1.27		
Maximum torque (N·m)	4.45		
Rated current (A)	2.4		Heatsink-based derating curve
Maximum current (A)	9.2		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.58		
Rotor moment of inertia (kg·cm^2)	Motor without brake	0.43±10%	
	Motor with brake	0.44±10%	

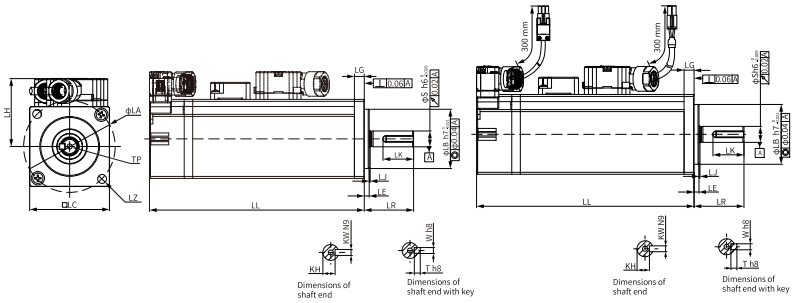
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1.5

Allowable load

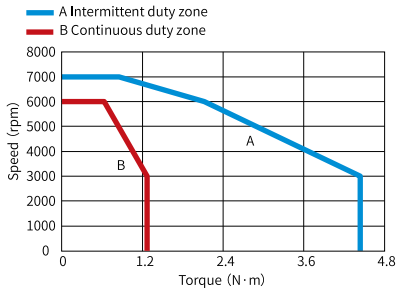
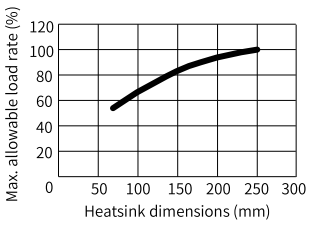
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	92 (119.8)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50h7^{0}_{-0.025}$	14	M5 x 8	16.5	$11^{0}_{-0.1}$	5	5	5	1.11 (1.48)

4.5.8 MS1H4-40B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	60		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.4		
Voltage (V)	220		
Rated torque (N·m)	1.27		
Maximum torque (N·m)	4.45		
Rated current (A)	2.4		Heatsink-based derating curve
Maximum current (A)	9.2		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.58		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	0.43±10%	
	Motor with brake	0.44±10%	

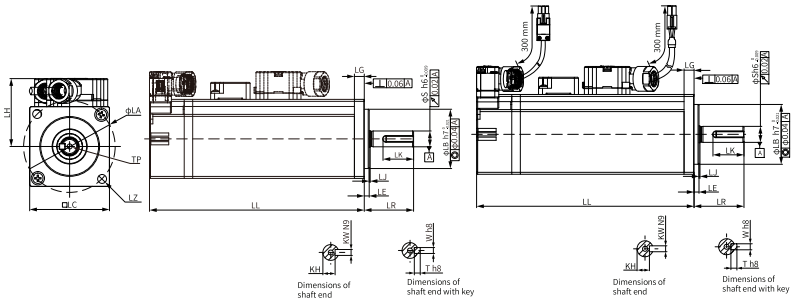
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
1.5	24	7.6	75.79	0.32	⩽ 60	⩽ 20	⩽ 1.5

Allowable load

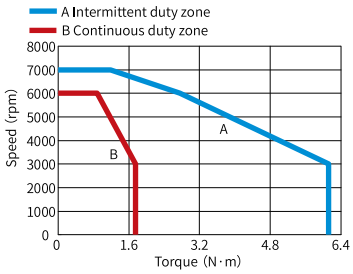
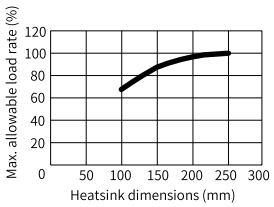
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
25	⩽ 245	⩽ 74

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
60	92 (119.8)	30±0.5	70	4 x ϕ5.5	44	8.0	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 50h7^{0}_{-0.025}$	14	M5 x 8	16.5	$11^{0}_{-0.1}$	5	5	5	1.11 (1.48)

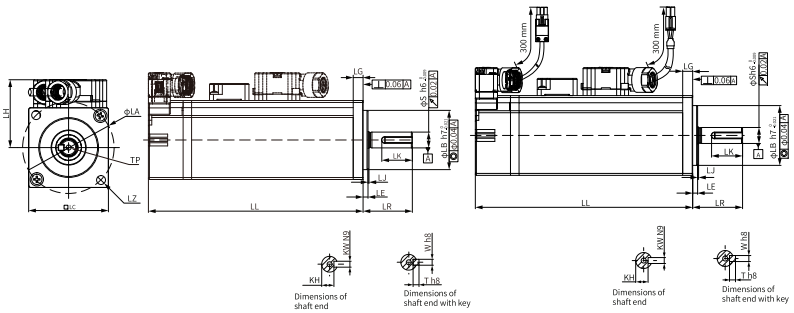
4.5.9 MS1H4-55B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.55		
Voltage (V)	220		
Rated torque (N·m)	1.75		
Maximum torque (N·m)	6.13		
Rated current (A)	3.3		Heatsink-based derating curve
Maximum current (A)	13.2		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.58		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	1.12±10%	
	Motor with brake	-	

Allowable load

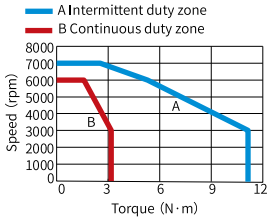
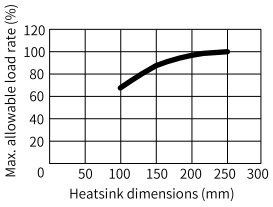
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	96.7	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	1.85

4.5.10 MS1H4-55B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	11.13		
Rated current (A)	6.5		Heatsink-based derating curve
Maximum current (A)	24		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.53		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	1.87±10%	
	Motor with brake	1.97±10%	

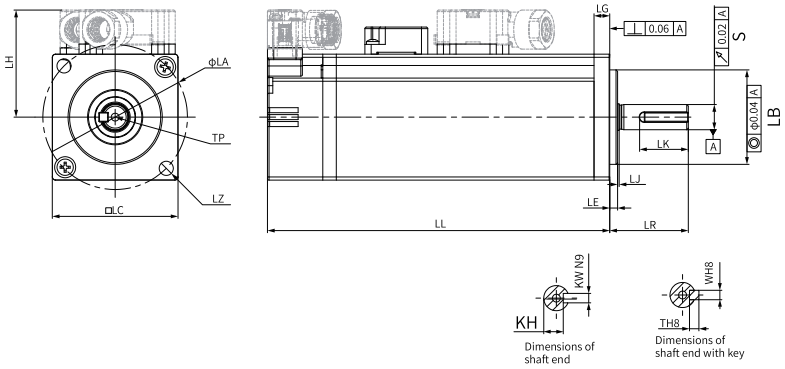
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

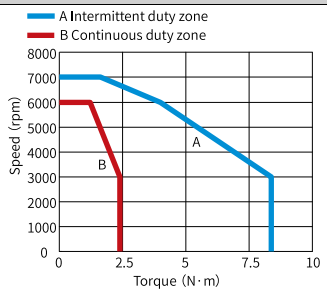
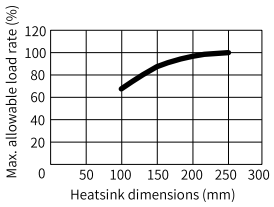
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	118.7 (153.2)	35±0.5	90	4 x ϕ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	2.55 (2.9)

4.5.11 MS1H4-75B30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.75		
Voltage (V)	220		
Rated torque (N·m)	2.39		
Maximum torque (N·m)	8.37		
Rated current (A)	4.4		Heatsink-based derating curve
Maximum current (A)	16.9		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.63		
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.46±10%	
	Motor with brake	1.51±10%	

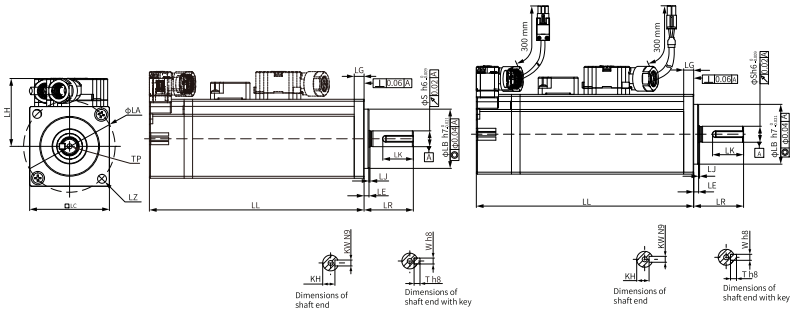
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

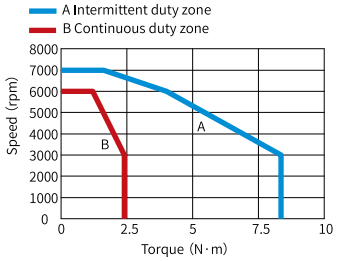
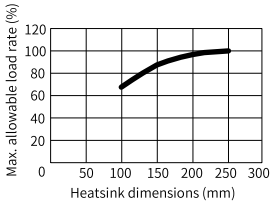
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	107.3 (141.5)	35±0.5	90	4 x φ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	2.18 (2.82)

4.5.12 MS1H4-75B30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	0.75		
Voltage (V)	220		
Rated torque (N·m)	2.39		
Maximum torque (N·m)	8.37		
Rated current (A)	4.4		Heatsink-based derating curve
Maximum current (A)	16.9		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.63		
Rotor moment of inertia (kg·cm²)	Motor without brake	1.46±10%	
	Motor with brake	1.51±10%	

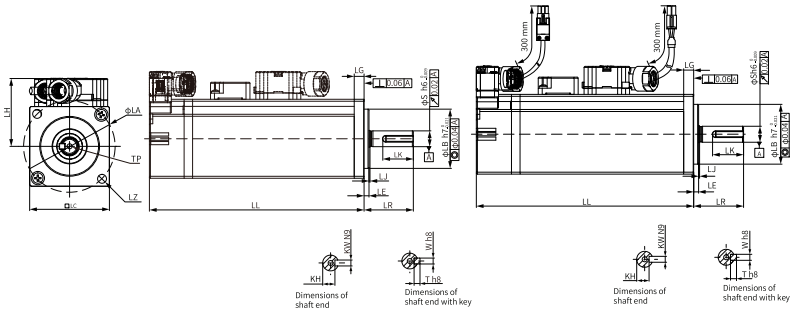
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

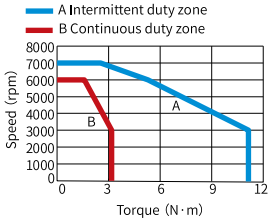
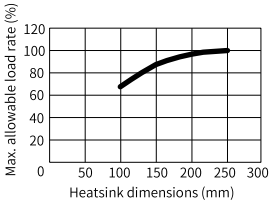
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	107.3 (141.5)	35±0.5	90	4 x ϕ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	2.18 (2.82)

4.5.13 MS1H4-10C30CB-A6/S63*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	11.13		
Rated current (A)	6.5		Heatsink-based derating curve
Maximum current (A)	24		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.53		
Rotor moment of inertia ($kg \cdot cm^2$)	Motor without brake	1.87±10%	
	Motor with brake	1.97±10%	

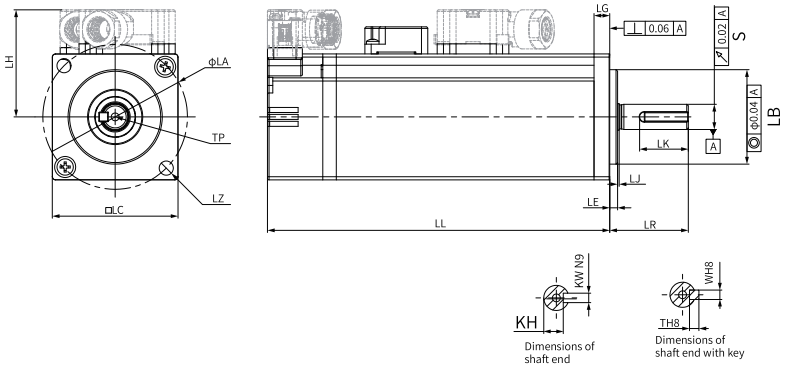
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

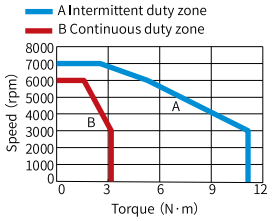
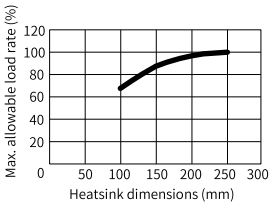
LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	118.7 (153.2)	35±0.5	90	4 x ϕ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	2.55 (2.9)

4.5.14 MS1H4-10C30CB-A33*R-INT

Motor specifications			Torque-Speed characteristics
Frame size (mm)	80		
Inertia, capacity	Medium inertia, low capacity		
Rated power (kW)	1.0		
Voltage (V)	220		
Rated torque (N·m)	3.18		
Maximum torque (N·m)	11.13		
Rated current (A)	6.5		Heatsink-based derating curve
Maximum current (A)	24		
Rated speed (rpm)	3000		
Maximum Speed (rpm)	7000		
Torque coefficient (N·m/A)	0.53		
Rotor moment of inertia (kg·cm^2)	Motor without brake	1.87±10%	
	Motor with brake	1.97±10%	

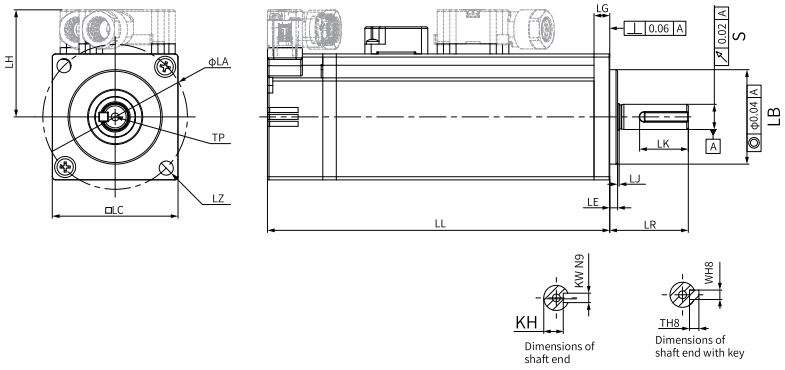
Electrical specifications of the brake

Holding torque (N·m)	Power supply voltage (VDC)±10%	Rated power (W)	Coil Resistance (Ω)±7%	Excitation current (A)	Apply time (ms)	Release time (ms)	Backlash (°)
3.2	24	10	57.6	0.42	⩽ 60	⩽ 40	⩽ 1

Allowable load

LF (mm)	Allowable radial load (N)	Allowable axial load (N)
35	⩽ 392	⩽ 147

Dimensions (mm)



LC	LL	LR	LA	LZ	LH	LG	LE	LJ
80	118.7 (153.2)	35±0.5	90	4 x ϕ7	54	7.5	3±0.5	0.5±0.35
LB	S	TP	LK	KH	kW	W	T	Weight (kg)
$\phi 70h7^{0}_{-0.03}$	19	M6 x 20	26	$15.5^{0}_{-0.1}$	6	6	6	2.55 (2.9)

5 Cable Selection

5.1 Model Description

Power cable model

S6-L-M ① 0 ② 0 ③ 1 ④ - 3.0 ⑤ - T ⑥ - INT ⑦

① **Cable type** S6-L-B/M: Motion control power cable B: With brake M: Without brake	③ **Applicable power of the motor** 0: Frame sizes 40/60/80 1: Frame sizes 100/130/180 2: Frame size 180 (motors of 4.4 kW and above)	⑤ **Cable length (m)** 3.0: 3 m 5.0: 5 m 10.0: 10 m
② **Connector type at drive side** 0: U-shaped cable lug 1: Pin-shaped cable lug	④ **Connector type at motor side** 1: 9-core aviation connector 2: 6-core aviation connector 7: SDC-06T series aviation connector (front outlet) 8: SDC-06T series aviation connector (rear outlet)	⑥ **Special requirements** Null: Non-flexible T: Flexible cables ⩾ 10 million bendings ⑦ **Version** INT: Global version[1]

Note

[1]: The material of the global version cables complies with CE and UL certification.

Encoder cable model

S6-L-P ① 1 ② 2 ③ 1 ④ - 3.0 ⑤ - T ⑥ - INT ⑦

① **Cable type** S6-L-P: Motion control encoder cable	③ **Encoder** 1: Communication-type incremental encoder 2: Multi-turn absolute encoder	⑤ **Cable length (m)** 3.0: 3 m 5.0: 5 m 10.0: 10 m
② **Connector type at drive side** 1: USB	④ **Connector type at motor side** 1: 9-core aviation connector 4: SDC-06T series aviation connector (front outlet) 5: SDC-06T series aviation connector (rear outlet)	⑥ **Special requirements** Null: Non-flexible T: Flexible cables ⩾ 10 million bendings ⑥ **Version** INT: Global version[1]

Note

[1]: The material of the global series cables complies with CE and UL certification.

Communication cable model

S6-L-T ① 00 ② - 0.3 ③

① Cable type	② Communication cable connection type	③ Cable Length (m)
S6-L-T: Motion control communication cable S6N-L-T: IS620F motion control encoder cable (only for communication cable between the drive and PC)	00: Servo drive PC communication cable 01: Servo drive network communication cable (CAN&485) 02: Servo drive to PLC communication cable 03: Servo drive communication termination resistor cable (CAN&485) 04: Servo drive network communication cable (EtherCAT)	0.3: 0.3 m

Note

For selection of cables, see section ''Cable Selection List''.

5.2 Cable Type

Fixed cables

Do not bend or move fixed cables during use. Bending or moving fixed cables may damage the cables and lead to a series of cable-related faults such as poor contact. Secure fixed cables through fixed binding. Certain bending radius must be available for the cables to prevent stress.

Recommended bending radius ⩾ 5D (D: Cable diameter)

Flexible cables

Flexible cables can move along with cable carriers without a high risk of abrasion.

Recommended bending radius ⩾ 10D (D: Cable diameter)

Note

- Do not twist cables inside the cable carrier.
- Ensure the cable can move within the bending radius. Do not move the cables by force. Ensure a relative movement between cables or between the cable and the guiding device is available.
- Do not fix or bundle the cables inside the cable carrier. The cables can be bundled and fixed only at two unmovable ends of the cable carrier.

Oil-resistant cables

Cables for global series motors are made of oil-resistant cables, which is suitable for use in applications requiring shielding of power cables such as machine tools, cutting fluids, and cutting oils.

More information

The R-version motor cables are fully compatible with the previous Z-version motor cables.

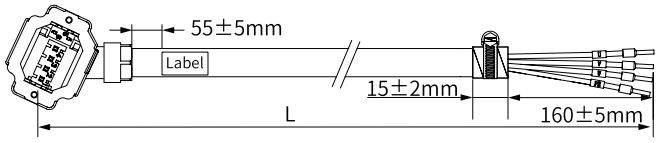
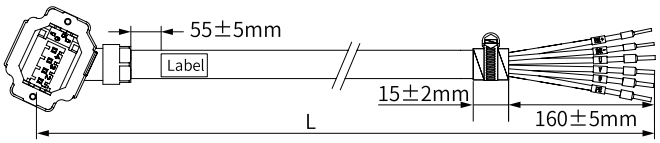
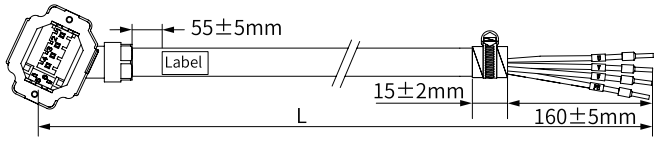
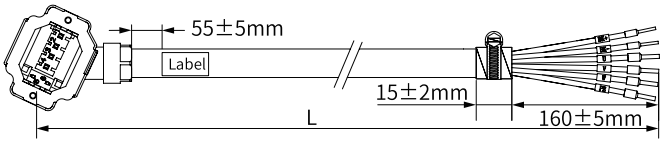
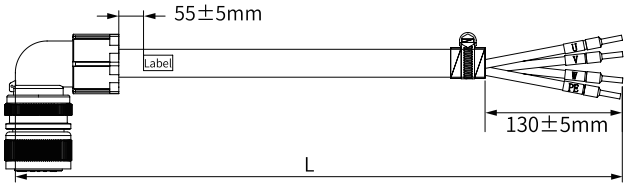
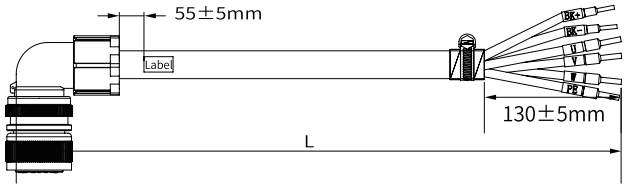
The terminal-type motor power cables and encoder cables require dedicated equipment and tooling for assembly. Order finished cables from channels authorized by Inovance.

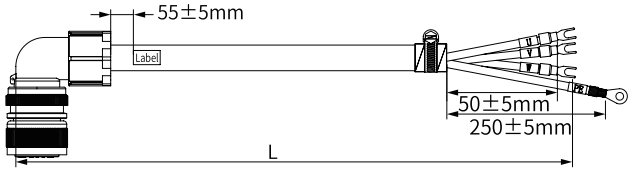
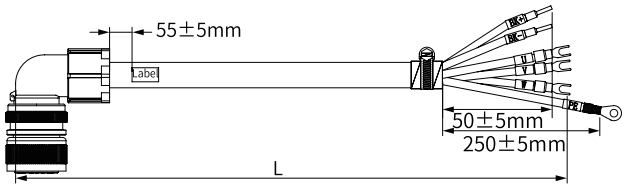
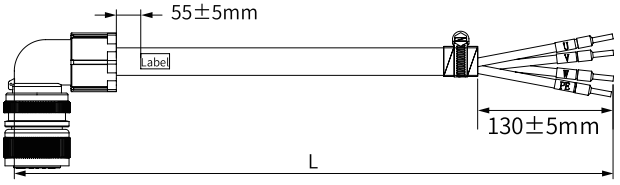
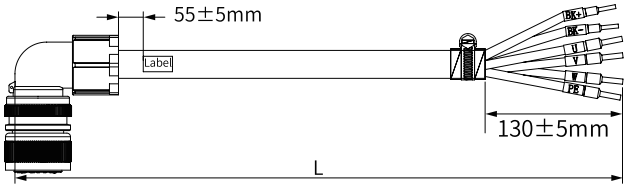
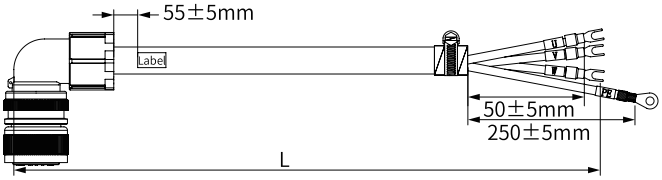
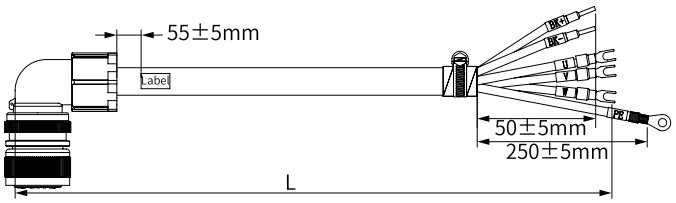
For motor information, see the hardware guide.

5.3 Cable Model Selection

5.3.1 SV680-INT Series

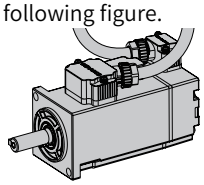
Power cable

Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 motor	Front outlet	Without brake	S6-L-M107-3.0 (-T) -INT	3000	
			S6-L-M107-5.0 (-T) -INT	5000	
			S6-L-M107-10.0 (-T) -INT	10000	
		With brake	S6-L-B107-3.0 (-T) -INT	3000	
			S6-L-B107-5.0 (-T) -INT	5000	
			S6-L-B107-10.0 (-T) -INT	10000	
	Rear outlet	Without brake	S6-L-M108-3.0 (-T) -INT	3000	
			S6-L-M108-5.0 (-T) -INT	5000	
			S6-L-M108-10.0 (-T) -INT	10000	
		With brake	S6-L-B108-3.0 (-T) -INT	3000	
			S6-L-B108-5.0 (-T) -INT	5000	
			S6-L-B108-10.0 (-T) -INT	10000	
MS1H2 motors rated 3 kW or below/ MS1H3 motors rated 1.8 kW or below	Without brake		S6-L-M111-3.0 (-T) -INT	3000	
			S6-L-M111-5.0 (-T) -INT	5000	
			S6-L-M111-10.0 (-T) -INT	10000	
	With brake		S6-L-B111-3.0 (-T) -INT	3000	
			S6-L-B111-5.0 (-T) -INT	5000	
			S6-L-B111-10.0 (-T) -INT	10000	

Motor model	Name	Cable model	Cable length (mm)	Drawing
MS1H2 motor rated 4 kW/5 kW	Without brake	S6-L-M011-3.0 (-T) -INT	3000	
		S6-L-M011-5.0 (-T) -INT	5000	
		S6-L-M011-10.0 (-T) -INT	10000	
	With brake	S6-L-B011-3.0 (-T) -INT	3000	
		S6-L-B011-5.0 (-T) -INT	5000	
		S6-L-B011-10.0 (-T) -INT	10000	
MS1H3 motors (2.9 kW)	Without brake	S6-L-M112-3.0 (-T) -INT	3000	
		S6-L-M112-5.0 (-T) -INT	5000	
		S6-L-M112-10.0 (-T) -INT	10000	
	With brake	S6-L-B112-3.0 (-T) -INT	3000	
		S6-L-B112-5.0 (-T) -INT	5000	
		S6-L-B112-10.0 (-T) -INT	10000	
MS1H3 (4.4 kW and above)	Without brake	S6-L-M022-3.0 (-T) -INT	3000	
		S6-L-M022-5.0 (-T) -INT	5000	
		S6-L-M022-10.0 (-T) -INT	10000	
	With brake	S6-L-B022-3.0 (-T) -INT	3000	
		S6-L-B022-5.0 (-T) -INT	5000	
		S6-L-B022-10.0 (-T) -INT	10000	

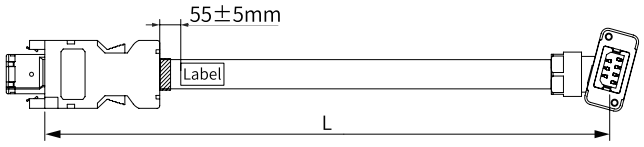
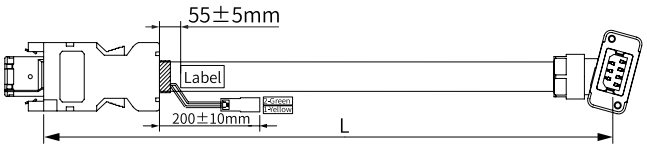
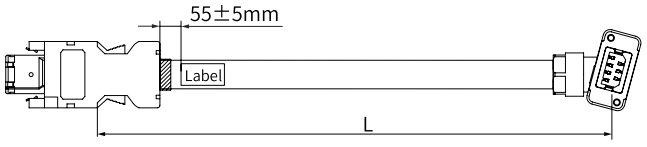
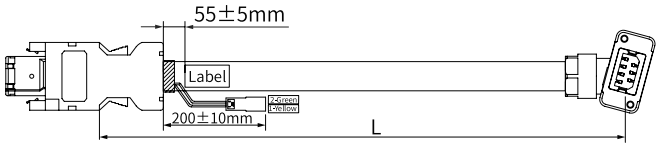
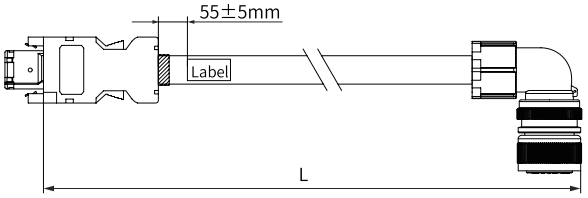
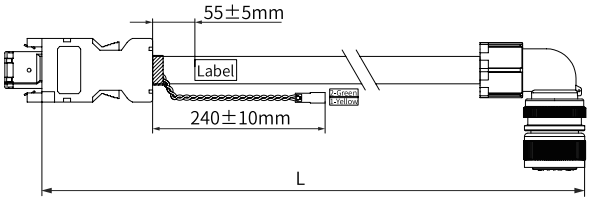
Note

- To prevent the mounting flange from being disturbed by power cables, route the power cables of 50 W motors through the rear outlet mode as shown in the following figure.



- For more information about cables, see the servo drive hardware guide.
- Power cables are equipped with a shield as standard. Select a shield bracket and lock the clamp on the cable to the shield bracket.
- -T: Flexible cable is optional.

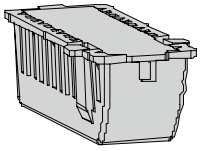
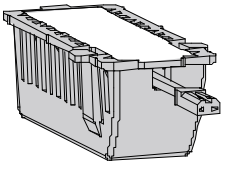
Encoder cable

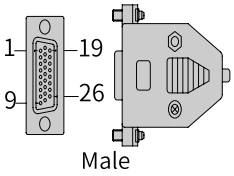
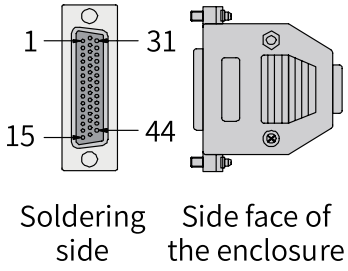
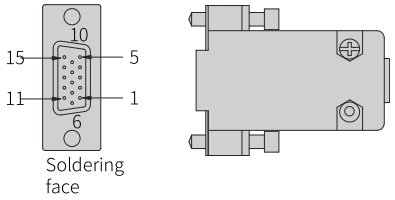
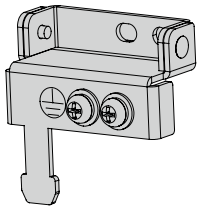
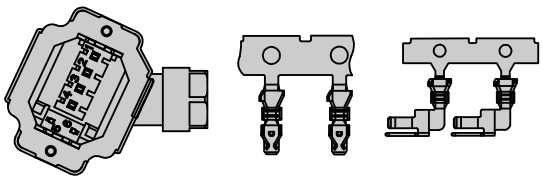
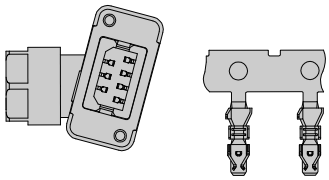
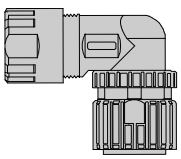
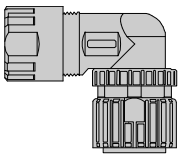
Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 terminal-type motors	Front outlet	Single-turn absolute encoder cable	S6-L-P114-3.0 (-T) -INT	3000	
			S6-L-P114-5.0 (-T) -INT	5000	
			S6-L-P114-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P124-3.0 (-T) -INT	3000	
			S6-L-P124-5.0 (-T) -INT	5000	
			S6-L-P124-10.0 (-T) -INT	10000	
	Rear outlet	Single-turn absolute encoder cable	S6-L-P115-3.0 (-T) -INT	3000	
			S6-L-P115-5.0 (-T) -INT	5000	
			S6-L-P115-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P125-3.0 (-T) -INT	3000	
			S6-L-P125-5.0 (-T) -INT	5000	
			S6-L-P125-10.0 (-T) -INT	10000	
MS1H2/MS1H3 motor		Single-turn absolute encoder cable	S6-L-P111-3.0 (-T) -INT	3000	
			S6-L-P111-5.0 (-T) -INT	5000	
			S6-L-P111-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P121-3.0 (-T) -INT	3000	
			S6-L-P121-5.0 (-T) -INT	5000	
			S6-L-P121-10.0 (-T) -INT	10000	

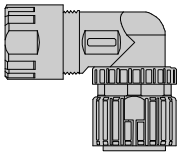
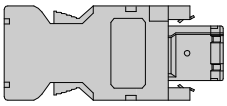
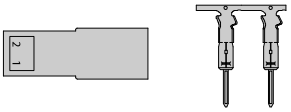
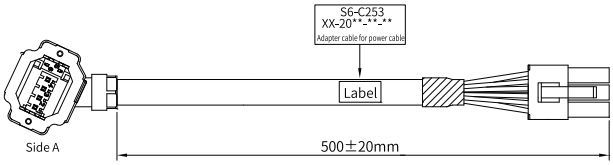
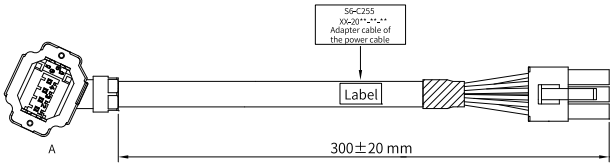
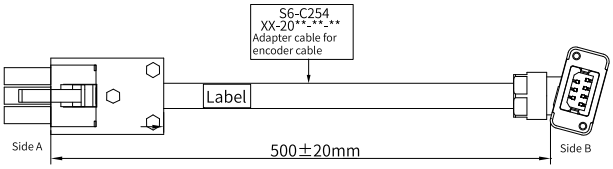
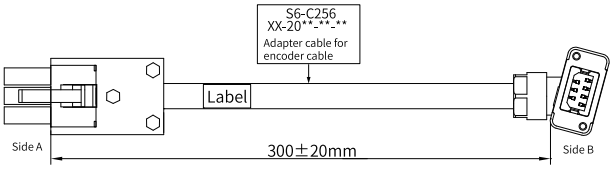
Note

The encoder cable is equipped with a shield as standard.

Connector kit

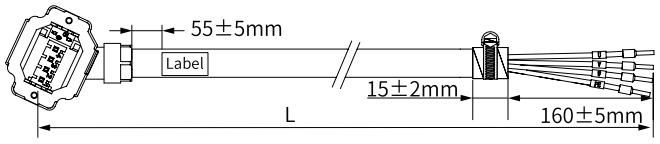
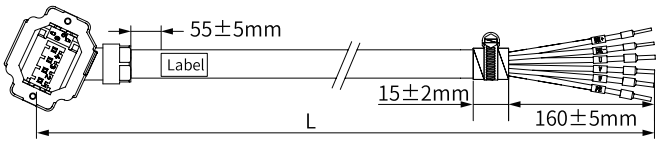
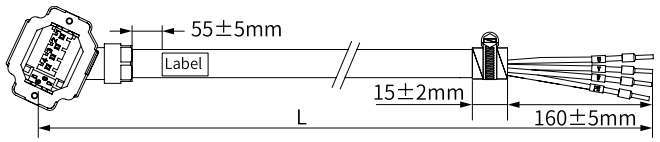
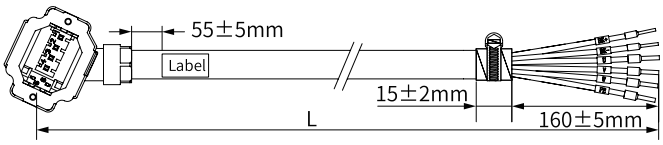
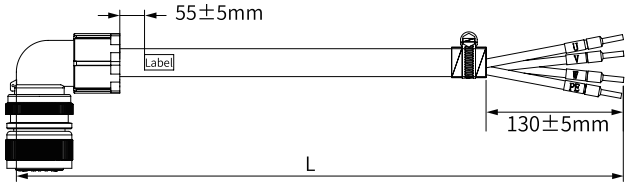
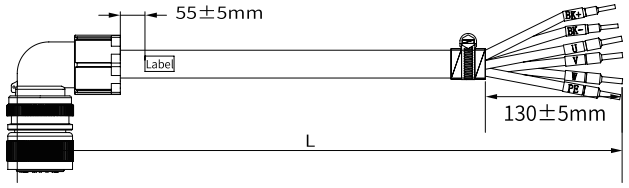
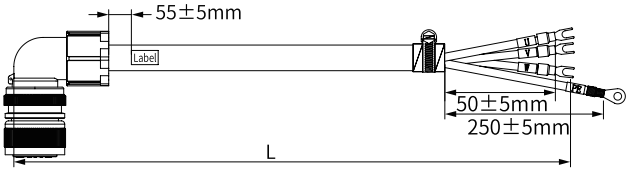
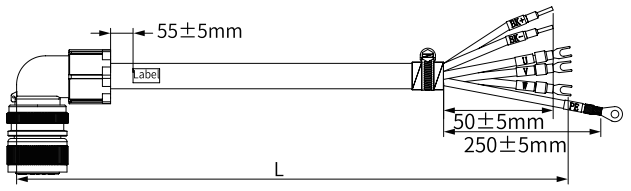
Name	Cable model	Drawing
Battery box kit (without battery)	S6-C4A-NB	
Battery kit	S6-C4A	

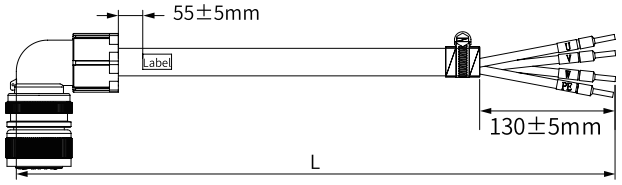
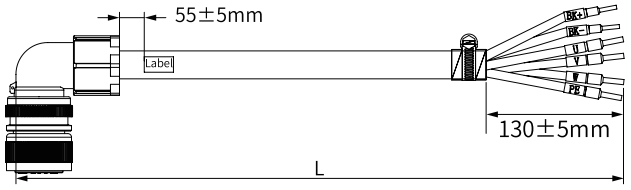
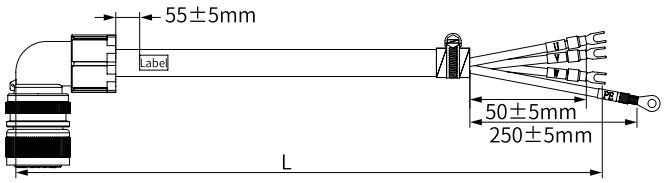
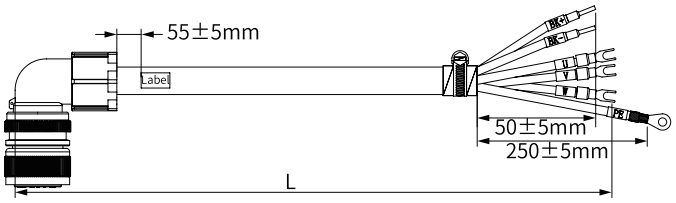
Name	Cable model	Drawing
CN1 terminal (DB26)	S6-C74	
CN1 terminal (DB44)	S6-C8	
CN7 terminal (DB15)	S6-C6	
Shield bracket	S6-C25 (optional for size A to size C) S6-C27 (optional for size D to size E)	
Power connector at motor side with power below 750 W	S6-C246	
Encoder connector at motor side with power below 750 W	S6-C247	
Power connector for frame sizes 100 to 130 at motor side with power above 1000 W	S6-C248	
Power connector for frame size 180 at motor side with power above 1000 W	S6-C249	

Name	Cable model	Drawing
Encoder connector at motor side with power above 1000 W	S6-C250	
CN2 (1394)	S6-C251	
Battery box connector	S6-C252	
Power flying leads at motor side with power below 750 W - 500 mm	S6-C253	
Power flying leads at motor side with power below 750 W - 300 mm	S6-C255	
Encoder flying leads at motor side with power below 750 W - 500 mm	S6-C254	
Encoder flying leads at motor side with power below 750 W - 300 mm	S6-C256	

5.3.2 SV670-INT Series

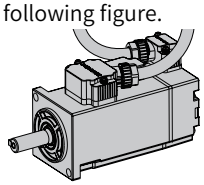
Power cable

Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 motor	Front outlet	Without brake	S6-L-M107-3.0 (-T) -INT	3000	
			S6-L-M107-5.0 (-T) -INT	5000	
			S6-L-M107-10.0 (-T) -INT	10000	
		With brake	S6-L-B107-3.0 (-T) -INT	3000	
			S6-L-B107-5.0 (-T) -INT	5000	
			S6-L-B107-10.0 (-T) -INT	10000	
	Rear outlet	Without brake	S6-L-M108-3.0 (-T) -INT	3000	
			S6-L-M108-5.0 (-T) -INT	5000	
			S6-L-M108-10.0 (-T) -INT	10000	
		With brake	S6-L-B108-3.0 (-T) -INT	3000	
			S6-L-B108-5.0 (-T) -INT	5000	
			S6-L-B108-10.0 (-T) -INT	10000	
MS1H2 motors rated 3 kW or below/ MS1H3 motors rated 1.8 kW or below	Without brake		S6-L-M111-3.0 (-T) -INT	3000	
			S6-L-M111-5.0 (-T) -INT	5000	
			S6-L-M111-10.0 (-T) -INT	10000	
	With brake		S6-L-B111-3.0 (-T) -INT	3000	
			S6-L-B111-5.0 (-T) -INT	5000	
			S6-L-B111-10.0 (-T) -INT	10000	
MS1H2 motor rated 4 kW/5 kW	Without brake		S6-L-M011-3.0 (-T) -INT	3000	
			S6-L-M011-5.0 (-T) -INT	5000	
			S6-L-M011-10.0 (-T) -INT	10000	
	With brake		S6-L-B011-3.0 (-T) -INT	3000	
			S6-L-B011-5.0 (-T) -INT	5000	
			S6-L-B011-10.0 (-T) -INT	10000	

Motor model	Name	Cable model	Cable length (mm)	Drawing
MS1H3 motors (2.9 kW)	Without brake	S6-L-M112-3.0 (-T) -INT	3000	
		S6-L-M112-5.0 (-T) -INT	5000	
		S6-L-M112-10.0 (-T) -INT	10000	
	With brake	S6-L-B112-3.0 (-T) -INT	3000	
		S6-L-B112-5.0 (-T) -INT	5000	
		S6-L-B112-10.0 (-T) -INT	10000	
MS1H3 (4.4 kW and above)	Without brake	S6-L-M022-3.0 (-T) -INT	3000	
		S6-L-M022-5.0 (-T) -INT	5000	
		S6-L-M022-10.0 (-T) -INT	10000	
	With brake	S6-L-B022-3.0 (-T) -INT	3000	
		S6-L-B022-5.0 (-T) -INT	5000	
		S6-L-B022-10.0 (-T) -INT	10000	

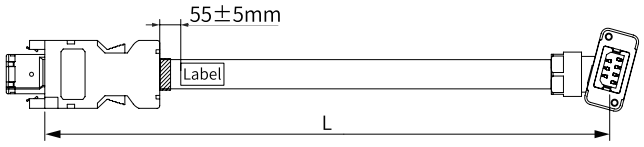
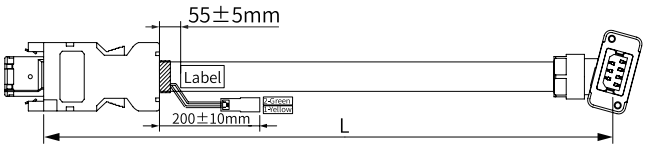
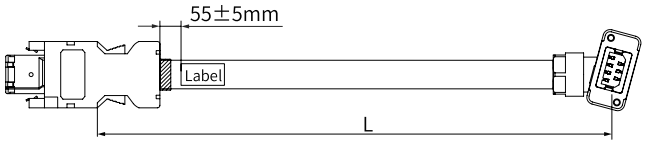
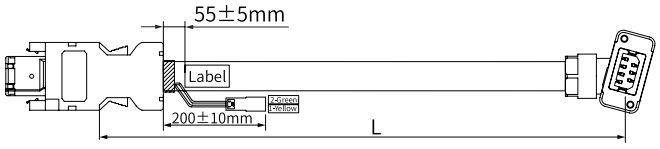
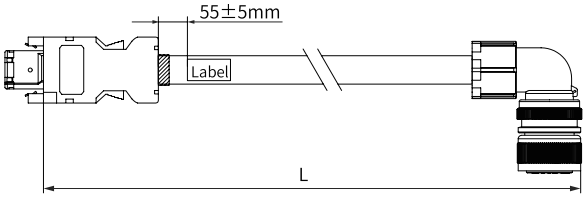
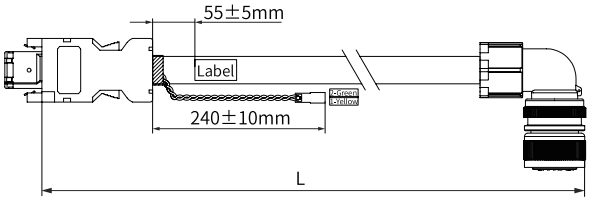
Note

- To prevent the mounting flange from being disturbed by power cables, route the power cables of 50 W motors through the rear outlet mode as shown in the following figure.



- For more information about cables, see the servo drive hardware guide.
- Power cables are equipped with a shield as standard. Select a shield bracket and lock the clamp on the cable to the shield bracket.
- -T: Flexible cable is optional.

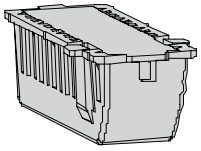
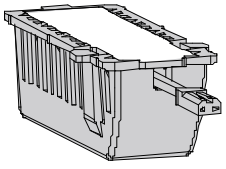
Encoder cable

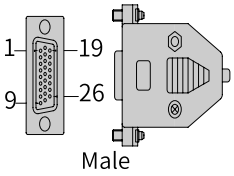
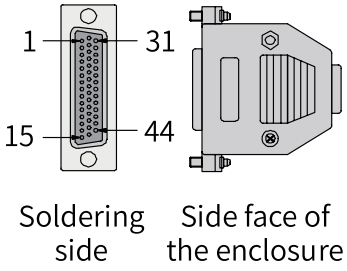
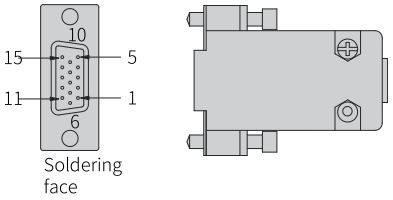
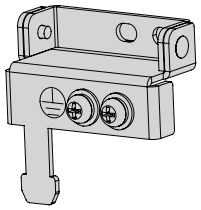
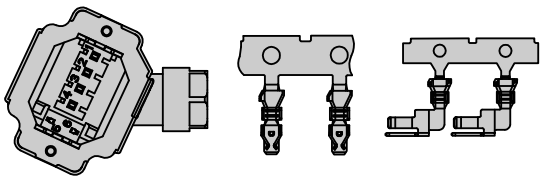
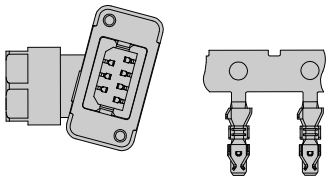
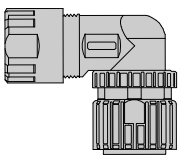
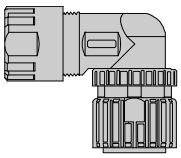
Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 terminal-type motors	Front outlet	Single-turn absolute encoder cable	S6-L-P114-3.0 (-T) -INT	3000	
			S6-L-P114-5.0 (-T) -INT	5000	
			S6-L-P114-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P124-3.0 (-T) -INT	3000	
			S6-L-P124-5.0 (-T) -INT	5000	
			S6-L-P124-10.0 (-T) -INT	10000	
	Rear outlet	Single-turn absolute encoder cable	S6-L-P115-3.0 (-T) -INT	3000	
			S6-L-P115-5.0 (-T) -INT	5000	
			S6-L-P115-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P125-3.0 (-T) -INT	3000	
			S6-L-P125-5.0 (-T) -INT	5000	
			S6-L-P125-10.0 (-T) -INT	10000	
MS1H2/MS1H3 motor		Single-turn absolute encoder cable	S6-L-P111-3.0 (-T) -INT	3000	
			S6-L-P111-5.0 (-T) -INT	5000	
			S6-L-P111-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P121-3.0 (-T) -INT	3000	
			S6-L-P121-5.0 (-T) -INT	5000	
			S6-L-P121-10.0 (-T) -INT	10000	

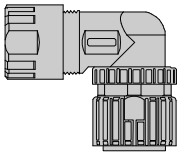
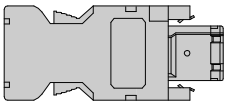
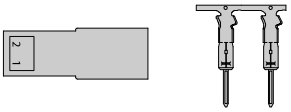
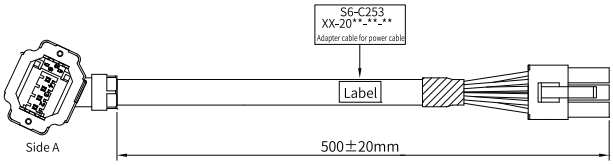
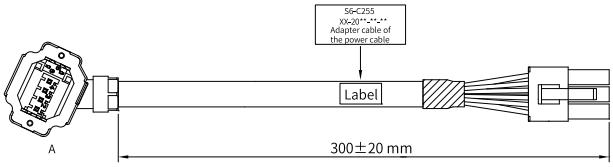
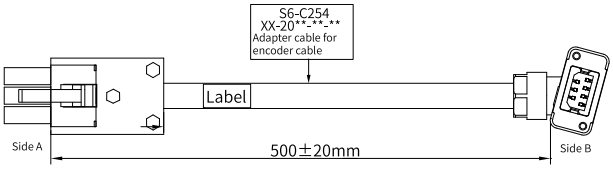
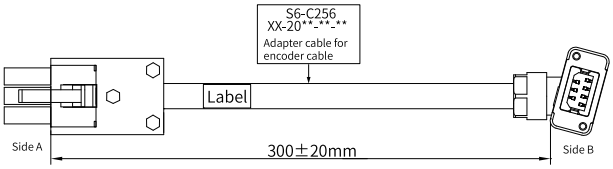
Note

The encoder cable is equipped with a shield as standard.

Connector Kit

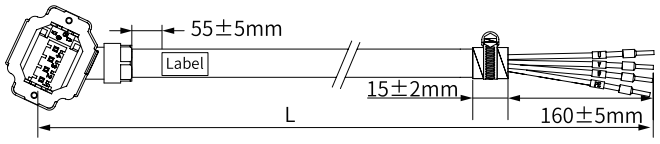
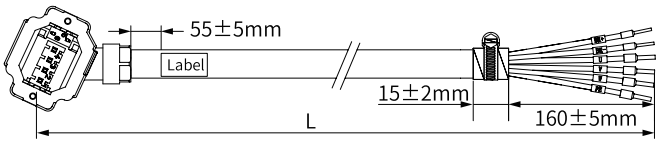
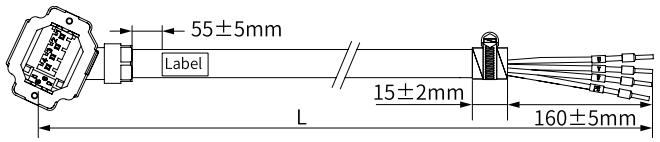
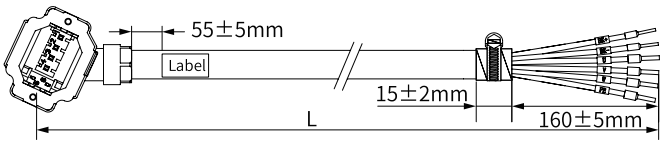
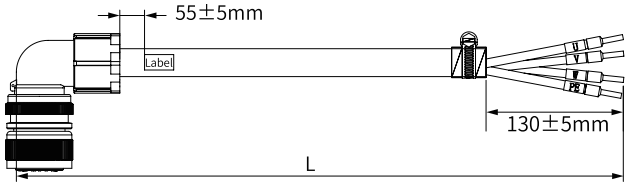
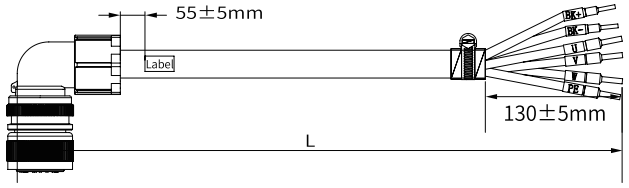
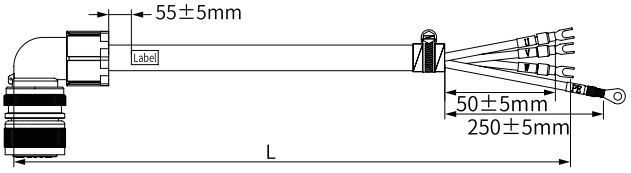
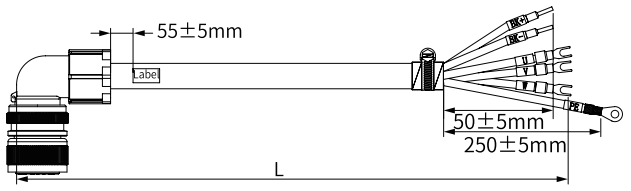
Name	Cable model	Drawing
Battery box kit (without battery)	S6-C4A-NB	
Battery kit	S6-C4A	

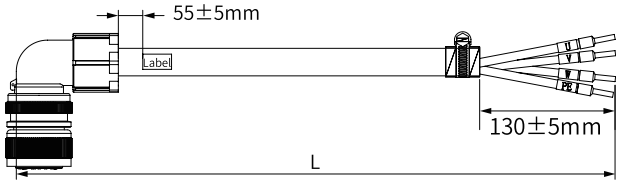
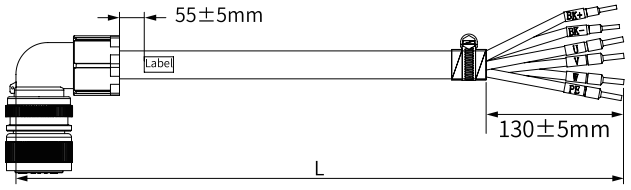
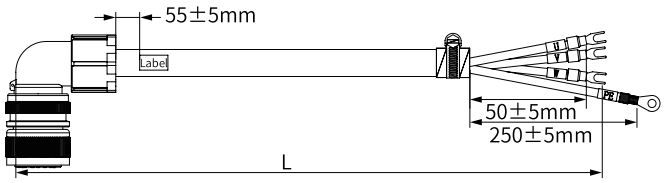
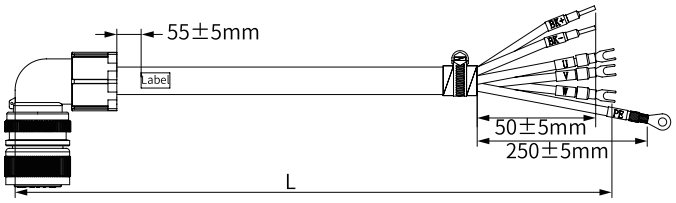
Name	Cable model	Drawing
CN1 terminal (DB26)	S6-C74	
CN1 terminal (DB44)	S6-C8	
CN7 terminal (DB15)	S6-C6	
Shield bracket	S6-C25 (optional for size A to size C) S6-C27 (optional for size D to size E)	
Power connector at motor side with power below 750 W	S6-C246	
Encoder connector at motor side with power below 750 W	S6-C247	
Power connector for frame sizes 100 to 130 at motor side with power above 1000 W	S6-C248	
Power connector for frame size 180 at motor side with power above 1000 W	S6-C249	

Name	Cable model	Drawing
Encoder connector at motor side with power above 1000 W	S6-C250	
CN2 (1394)	S6-C251	
Battery box connector	S6-C252	
Power flying leads at motor side with power below 750 W - 500 mm	S6-C253	
Power flying leads at motor side with power below 750 W - 300 mm	S6-C255	
Encoder flying leads at motor side with power below 750 W - 500 mm	S6-C254	
Encoder flying leads at motor side with power below 750 W - 300 mm	S6-C256	

5.3.3 SV660-INT Series

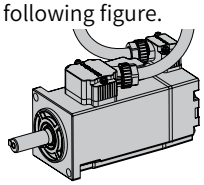
Power cable

Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 motor	Front outlet	Without brake	S6-L-M107-3.0 (-T) -INT	3000	
			S6-L-M107-5.0 (-T) -INT	5000	
			S6-L-M107-10.0 (-T) -INT	10000	
		With brake	S6-L-B107-3.0 (-T) -INT	3000	
			S6-L-B107-5.0 (-T) -INT	5000	
			S6-L-B107-10.0 (-T) -INT	10000	
	Rear outlet	Without brake	S6-L-M108-3.0 (-T) -INT	3000	
			S6-L-M108-5.0 (-T) -INT	5000	
			S6-L-M108-10.0 (-T) -INT	10000	
		With brake	S6-L-B108-3.0 (-T) -INT	3000	
			S6-L-B108-5.0 (-T) -INT	5000	
			S6-L-B108-10.0 (-T) -INT	10000	
MS1H2 motors rated 3 kW or below/ MS1H3 motors rated 1.8 kW or below	Without brake		S6-L-M111-3.0 (-T) -INT	3000	
			S6-L-M111-5.0 (-T) -INT	5000	
			S6-L-M111-10.0 (-T) -INT	10000	
	With brake		S6-L-B111-3.0 (-T) -INT	3000	
			S6-L-B111-5.0 (-T) -INT	5000	
			S6-L-B111-10.0 (-T) -INT	10000	
MS1H2 motor rated 4 kW/5 kW	Without brake		S6-L-M011-3.0 (-T) -INT	3000	
			S6-L-M011-5.0 (-T) -INT	5000	
			S6-L-M011-10.0 (-T) -INT	10000	
	With brake		S6-L-B011-3.0 (-T) -INT	3000	
			S6-L-B011-5.0 (-T) -INT	5000	
			S6-L-B011-10.0 (-T) -INT	10000	

Motor model	Name	Cable model	Cable length (mm)	Drawing
MS1H3 motors (2.9 kW)	Without brake	S6-L-M112-3.0 (-T) -INT	3000	
		S6-L-M112-5.0 (-T) -INT	5000	
		S6-L-M112-10.0 (-T) -INT	10000	
	With brake	S6-L-B112-3.0 (-T) -INT	3000	
		S6-L-B112-5.0 (-T) -INT	5000	
		S6-L-B112-10.0 (-T) -INT	10000	
MS1H3 (4.4 kW and above)	Without brake	S6-L-M022-3.0 (-T) -INT	3000	
		S6-L-M022-5.0 (-T) -INT	5000	
		S6-L-M022-10.0 (-T) -INT	10000	
	With brake	S6-L-B022-3.0 (-T) -INT	3000	
		S6-L-B022-5.0 (-T) -INT	5000	
		S6-L-B022-10.0 (-T) -INT	10000	

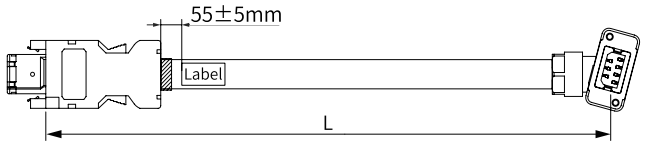
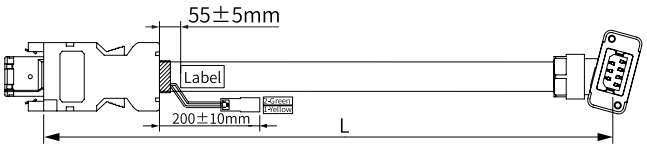
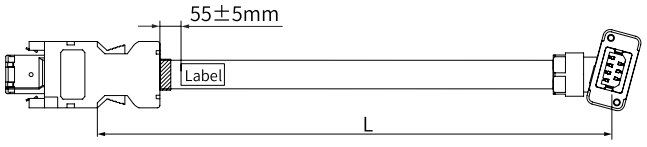
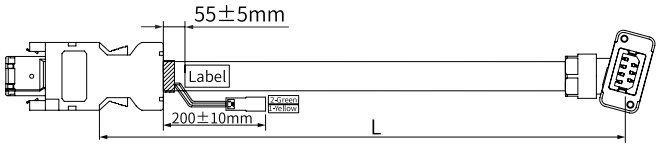
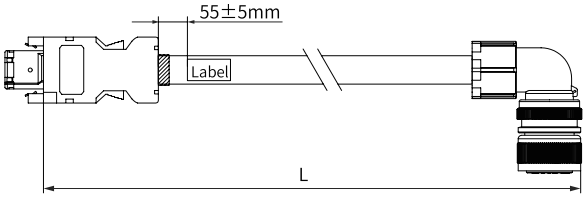
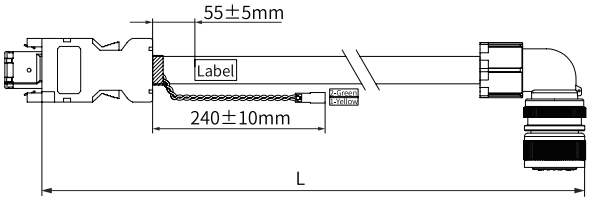
Note

- To prevent the mounting flange from being disturbed by power cables, route the power cables of 50 W motors through the rear outlet mode as shown in the following figure.



- For more information about cables, see the servo drive hardware guide.
- Power cables are equipped with a shield as standard. Select a shield bracket and lock the clamp on the cable to the shield bracket.
- -T: Flexible cable is optional.

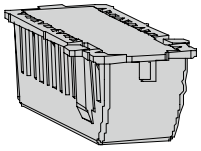
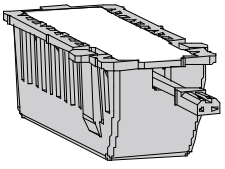
Encoder cable

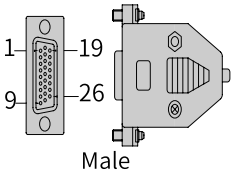
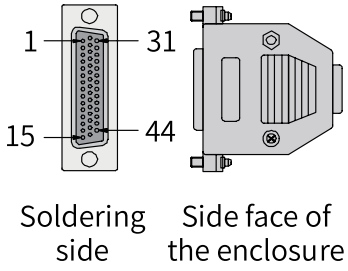
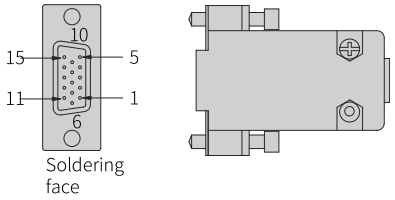
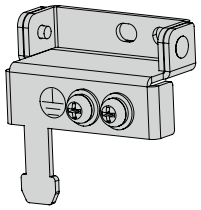
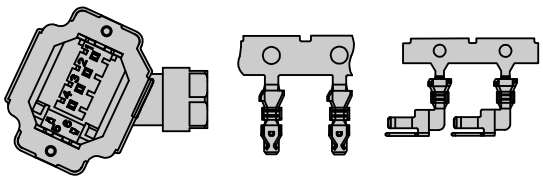
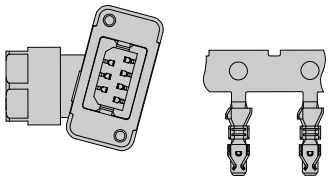
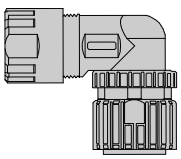
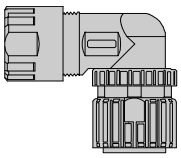
Motor model	Name		Cable model	Cable length (mm)	Drawing
MS1H1/ MS1H4 terminal-type motors	Front outlet	Single-turn absolute encoder cable	S6-L-P114-3.0 (-T) -INT	3000	
			S6-L-P114-5.0 (-T) -INT	5000	
			S6-L-P114-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P124-3.0 (-T) -INT	3000	
			S6-L-P124-5.0 (-T) -INT	5000	
			S6-L-P124-10.0 (-T) -INT	10000	
	Rear outlet	Single-turn absolute encoder cable	S6-L-P115-3.0 (-T) -INT	3000	
			S6-L-P115-5.0 (-T) -INT	5000	
			S6-L-P115-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P125-3.0 (-T) -INT	3000	
			S6-L-P125-5.0 (-T) -INT	5000	
			S6-L-P125-10.0 (-T) -INT	10000	
MS1H2/MS1H3 motor		Single-turn absolute encoder cable	S6-L-P111-3.0 (-T) -INT	3000	
			S6-L-P111-5.0 (-T) -INT	5000	
			S6-L-P111-10.0 (-T) -INT	10000	
		Multi-turn absolute encoder cable	S6-L-P121-3.0 (-T) -INT	3000	
			S6-L-P121-5.0 (-T) -INT	5000	
			S6-L-P121-10.0 (-T) -INT	10000	

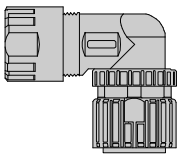
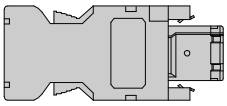
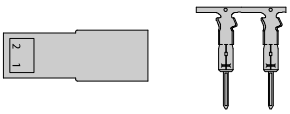
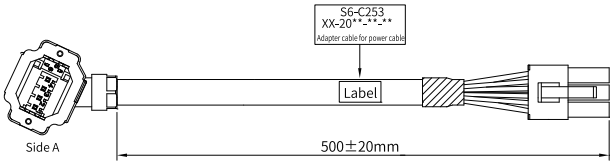
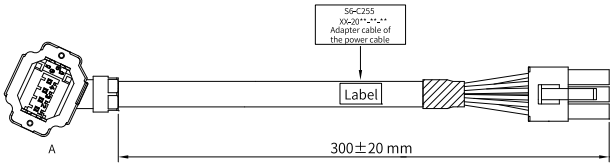
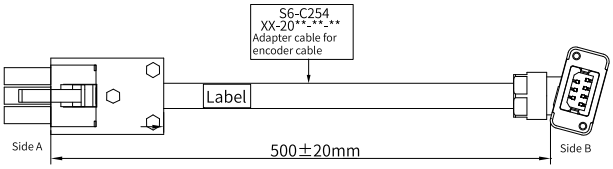
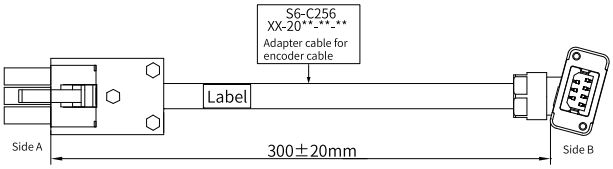
Note

The encoder cable is equipped with a shield as standard.

Connector kit

Name	Cable model	Drawing
Battery box kit (without battery)	S6-C4A-NB	
Battery kit	S6-C4A	

Name	Cable model	Drawing
CN1 terminal (DB26)	S6-C74	
CN1 terminal (DB44)	S6-C8	
CN7 terminal (DB15)	S6-C6	
Shield bracket	S6-C25 (optional for size A to size C) S6-C27 (optional for size D to size E)	
Power connector at motor side with power below 750 W	S6-C246	
Encoder connector at motor side with power below 750 W	S6-C247	
Power connector for frame sizes 100 to 130 at motor side with power above 1000 W	S6-C248	
Power connector for frame size 180 at motor side with power above 1000 W	S6-C249	

Name	Cable model	Drawing
Encoder connector at motor side with power above 1000 W	S6-C250	
CN2 (1394)	S6-C251	
Battery box connector	S6-C252	
Power flying leads at motor side with power below 750 W - 500 mm	S6-C253	
Power flying leads at motor side with power below 750 W - 300 mm	S6-C255	
Encoder flying leads at motor side with power below 750 W - 500 mm	S6-C254	
Encoder flying leads at motor side with power below 750 W - 300 mm	S6-C256	

5.4 Cable Terminal Description

5.4.1 Power Cable Terminals

- The following figure shows the wiring diagram for a terminal-type motor.

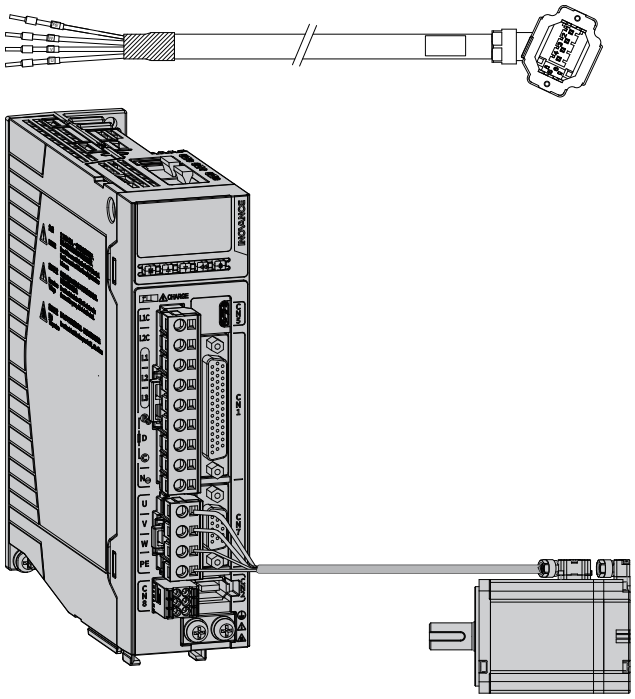
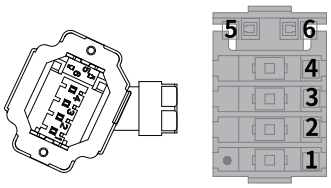


Figure 5-1 Wiring between the servo drive and terminal-type motor

Table 5–1 Power cable connector (servo motor side)

Applicable frame size [1]	Drawing of the connector	Pin layout		
		Pin No.	Signal name	Color
Terminal-type: 40 60 80	 Black 6-pin connector	1	PE	Yellow/Green
		2	W	Black 3
		3	V	Black 2
		4	U	Black 1
		5	Brake (polarity insensitive)	White
		6		Brown

Note

- [1] The frame size refers to the width of the mounting flange (in mm).
- Power cable colors are subject to the actual product. All cable colors mentioned in this guide refer to Inovance cable colors.
- Ground the motor to the PE position of the drive screw if possible. For details, see System Wiring Diagram.

- The following table describes the connector for high-power motor power cables.

Table 5–2 Power cable connector (servo motor side)

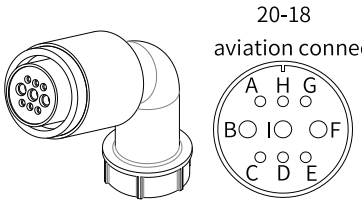
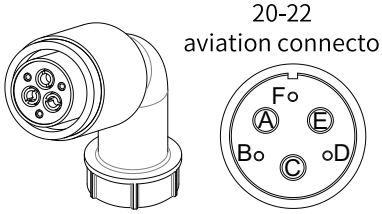
Applicable frame size [1]	Drawing of the connector	Pin layout		
		Pin No.	Signal name	Color
100 130	 MIL-DTL-5015 series 3108E20-18S aviation connector	B	U	Black 1
		I	V	Black 2
		F	W	Black 3
		G	PE	Yellow/Green
		C	Brake (polarity insensitive)	Black 4
		E		Black 5

Table 5–3 Power cable connector (servo motor side)

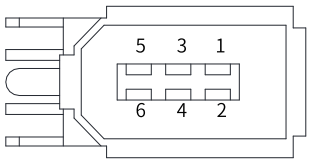
Applicable frame size [1]	Drawing of the connector	Pin layout		
		Pin No.	Signal name	Color
180	 MIL-DTL-5015 series 3108E20-22S aviation connector	A	U	Black 1
		C	V	Black 2
		E	W	Black 3
		F	PE	Yellow/Green
		B	Brake (polarity insensitive)	Black 4
		D		Black 5

Note

- [1] The frame size refers to the width of the mounting flange.
- Power cable colors are subject to the actual product. All cable colors mentioned in this guide refer to Inovance cable colors.
- Ground the motor to the PE position of the drive screw if possible. For details, see System Wiring Diagram.

5.4.2 Encoder Cable Terminals

Terminal layout



Encoder signal terminal CN2

Figure 5-2 Layout of encoder terminal pins

Table 5–4 Description of encoder terminal pins

Pin No.	Assignment	Description
1	+5V	5 V power supply
2	GND	
3	Reserved	-
4	Reserved	-
5	PS+	Gantry synchronization signal
6	PS-	
Enclosure	PE	Shield

Terminal description

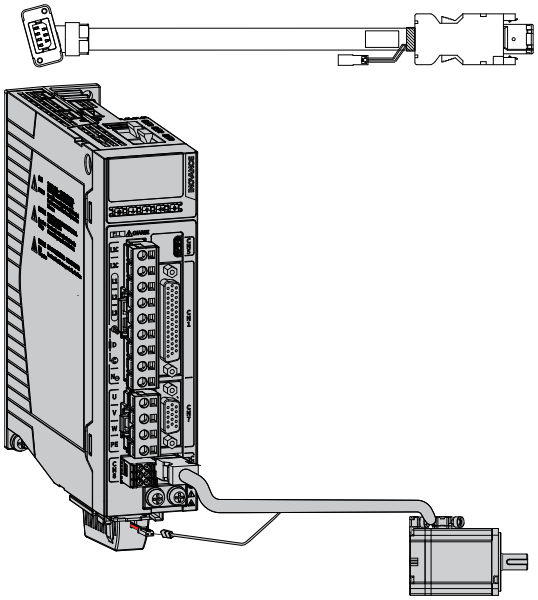


Figure 5-3 Wiring example of absolute encoder signals [1]

Note

- [1] The preceding figure shows the wiring of a 26-bit multi-turn absolute encoder.
- The encoder cable color is subject to the color of the actual product. Cable colors mentioned in this guide all refer to Inovance cables.

The following figure describes the lead wire color of the battery box.

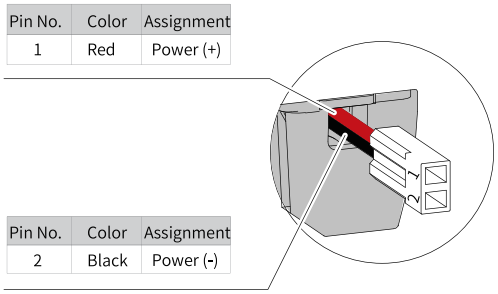
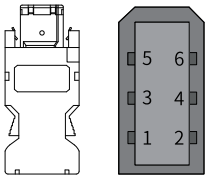
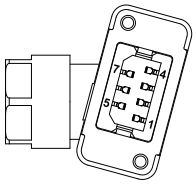


Figure 5-4 Lead wire color of the battery box

Note

- Keep the battery in environments within the required ambient temperature range and ensure the battery is in reliable contact and carries sufficient power capacity. Otherwise, encoder data loss may occur.
- Model of the battery box (battery included): S6-C4A

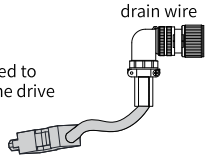
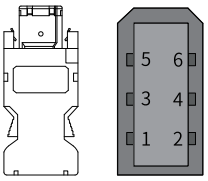
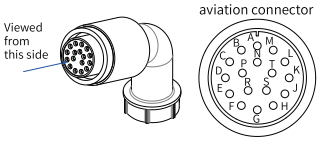
Table 5–5 Terminal-type motor encoder cable connector

Applicable motor frame size [1]	Drawing of the connector		Pin layout			
			Pin No.	Signal name	Color	Type
Terminal-type: 40 60 80	Drive side	 6-pin male (right side as the joint side)	1	+5V	White	Twisted pair
			2	GND	Brown	
			5	PS+	Gray	Twisted pair
			6	PS-	Pink	
			Enclosure	PE	-	-
	Mo tor side	 7-pin connector	1	PS+	Gray	Twisted pair
			2	PS-	Pink	
			3	DC+	Yellow	Twisted pair
			4	DC-	Green	
			5	+5V	White	Twisted pair
			6	GND	Brown	
			7	PE	-	-

Note

[1] The frame size refers to the width of the mounting flange.

Table 5–6 High power motor encoder cable connector

Applicable motor frame size [1]	Drawing of the connector			Pin layout			
				Pin No.	Signal name	Color	Type
100 130 180	Connected to CN2 of the drive 	Drive side	 6-pin male (right side as the joint side)	1	+5V	White	Twisted pair
				2	GND	Brown	
				5	PS+	Gray	Twisted pair
				6	PS-	Pink	
				Enclosure	PE	-	-
		Motor side		A	PS+	Gray	Twisted pair
				B	PS-	Pink	
				E	DC+	Yellow	Twisted pair
				F	DC-	Green	
				G	+5V	White	-
				H	GND	Brown	
				J	Shield	-	

Note

[1] The frame size refers to the width of the mounting flange (in mm).

5.5 Connectors

Power cable connector

Note

Check that the connector cushion is in place before connection.

Align pins 5 and 6 with corresponding holes (as shown in the following figure) and insert them into the holes. Do not insert pins 5 and 6 forcibly. After insertion, screw down with a tightening torque of 1.5 ±0.5 kgf.cm.

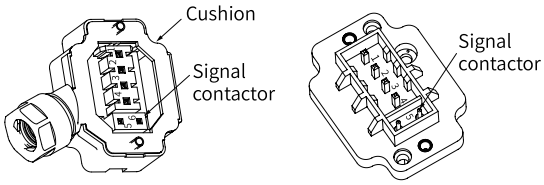


Figure 5-5 Power connector

Encoder connector

Note

Check that the connector cushion is in place before connection.

Connectors and sockets are designed with fool-proof chamfers (as shown below). Align the fool-proof chamfer before insertion. After insertion, screw down the two screws on the connector with a tightening torque of 1.5±0.5 kgf.cm·m.

Check that the connector cushion is in place before connection.

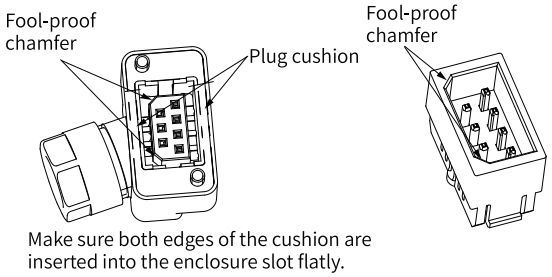


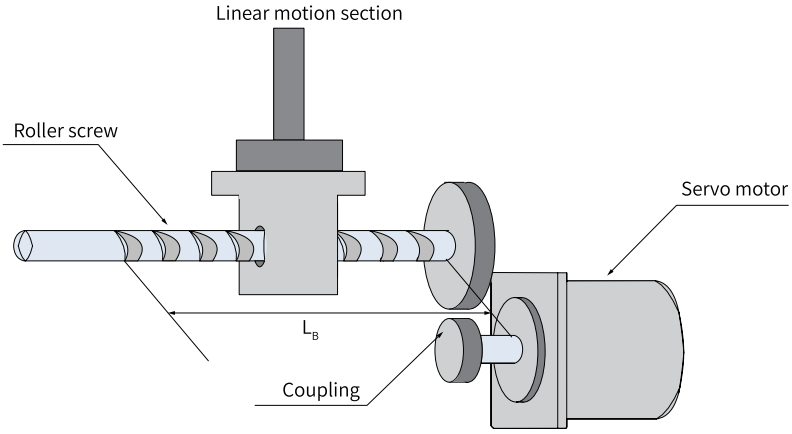
Figure 5-6 Encoder connector

Note

- The assembly direction of the plug insulator is subject to the actual direction.
- Do not energize an electrical connector connected loosely. Plug-in/out is not allowed when the power is on.
- The mating life of the electrical connector is 50 cycles. Keep the connector and socket clean without greasy dirt during use. Handle the connector and socket with care to prevent damage.
- Before connecting the male and female connectors, ensure they are free from condensation and pollutants. Take protective measures for idled connectors to prevent intrusion of dust and liquid.

6 Servo Motor Capacity Selection

6.1 Capacity Selection Example for Position Control



Load speed (V_L) = 15 m/min

Mass of the rectilinear motion part (m): 80 kg

Roller screw length (L_B): 0.8 m

Roller screw diameter (d_B): 0.016 m

Roller screw lead (P_B): 0.005 m

Coupling mass (m_c): 0.3 kg

Coupling outer diameter (d_c): 0.03 m

Times of feeding (n): 40/min

Length of feeding (L): 0.25 m

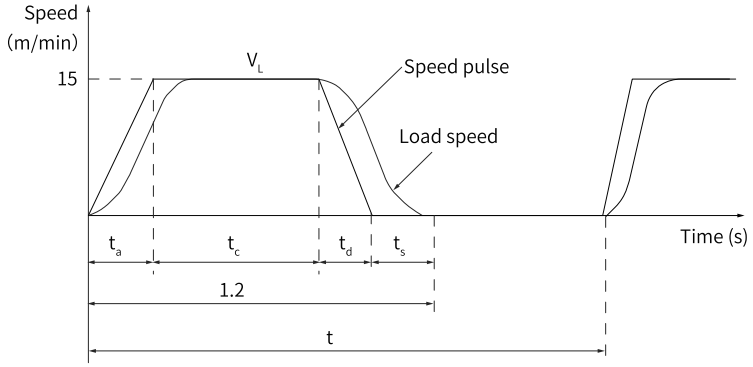
Feeding time (t_m) < 1.2s

Electrical stopping precision (δ) = ±0.01 mm

Friction coefficient (μ): 0.2

Mechanical efficiency (η) = 0.9 (90%)

1. **Speed diagram**



$$t = \frac{60}{n} = \frac{60}{40} = 1.5(s)$$

$$T_a = t_d, t_s = 0.1(s)$$

$$Ta = t_m - t_s - \frac{60L}{V_L} = 1.2 - 0.1 - \frac{60 \times 0.25}{15} = 0.1(s)$$

$$t_c = 1.2 - 0.1 - 0.1 \times 2 = 0.9(s)$$

2. **Speed**

- Rotational speed of the load shaft

$$n_L = \frac{V_L}{P_B} = \frac{15}{0.005} = 3000\ (\text{rpm})$$

- Rotational speed of the motor shaft
  As the coupling is directly connected, the gear ratio (1/R) is 1:1.

$$n_M = n_L \times R = 3000 \times 1 = 3000\ (\text{rpm})$$

3. **Load torque**

$$T_L = \frac{9.8\,\mu \times m \times P_B}{2\pi R \times \eta} = \frac{9.8 \times 0.2 \times 80 \times 0.005}{2\pi \times 1 \times 0.9} = 0.139\ (\text{N}\cdot\text{m})$$

4. **Load Moment of Inertia**

- Rectilinear motion part

$$J_{LI} = m \times \left(\frac{P_B}{2\pi R}\right)^2 = 80 \times \left(\frac{0.005}{2\pi \times 1}\right)^2 = 0.507 \times 10^{-4}\ (\text{kg}\cdot\text{m}^2)$$

- Roller screw

$$J_B = \frac{\pi}{32} P \times L_B \times d_B^4 = \frac{\pi}{32} \times 7.87 \times 10^3 \times 0.8 \times (0.016)^4 = 0.405 \times 10^{-4}(\text{kg}\cdot\text{m}^2)$$

- Coupling

$$J_C = \frac{1}{8} m_c \times d_c^4 = \frac{1}{8} \times 0.3 \times (0.03)^2 = 0.338 \times 10^{-4}(\text{kg}\cdot\text{m}^2)$$

5. **Load moving power**

$$P_O = \frac{2\pi \times n_M \times T_L}{60} = \frac{2\pi \times 3000 \times 0.139}{60} = 43.7\ (\text{W})$$

6. **Load acceleration power**

$$P_a = \left(\frac{2\pi}{60} \times n_m\right)^2 \frac{J_L}{t_a} = \left(\frac{2\pi}{60} \times n_m\right)^2 \times \frac{J_{LI} + J_B + J_C}{t_a}$$

$$= \left(\frac{2\pi}{60} \times 3000\right)^2 \times \frac{1.25 \times 10^{-4}}{0.1} = 123.4\ (\text{W})$$

7. **Temporary settings of the servo motor**

- Selection condition
  $T_L \leqslant$ Rated torque of the motor

  $P_a + P_o$ = (1 to 2) x Rated output of the motor

  $n_M \leqslant$ Rated speed of the motor

  $J_L \leqslant$ Allowable load moment of inertia of the servo unit

  Perform the following provisional selections according to preceding conditions:

  Servo motor: MS1H1-20B30CB-A630R

  Servo drive: SV670PS1R6I

- Specifications of the servo motor and servo drive

Rated output: 200 (W)

Rated speed: 3000 (RPM)

Rated torque: 0.64 (N · m)

Maximum instantaneous torque: 1.95 (N · m)

Rotor moment of inertia: 0.082×10^{-4} ($kg \cdot m^2$)

Allowable load moment of inertia: 1.64×10^{-4} ($kg \cdot m^2$)

Number of encoder pulses: 67108864 (P/R)

8. **Confirmation of the servo motor selected temporarily**

Confirm the startup torque required

$$T_p = \frac{2\pi \times n_M \times (J_M + J_L)}{60 \times t_a} + T_L = \frac{2\pi \times 3000 \times (0.082 + 1.25) \times 10^{-4}}{60 \times 0.1} + 0.139$$

$= 0.557$ (N · m) < Max. instantaneous torque...Satisfactory

Confirm the brake torque required

$$T_s = \frac{2\pi \times n_M \times (J_M + J_L)}{60 \times t_a} - T_L = \frac{2\pi \times 3000 \times (0.082 + 1.25) \times 10^{-4}}{60 \times 0.1} - 0.139$$

$= 0.279$(N · m) < Max. instantaneous torque...Satisfactory

Confirm the effective torque value

$$T_{rms} = \sqrt{\frac{T_p^2 \times t_a + T_L^2 \times t_c + T_s^2 \times t_d}{t}}$$

$$= \sqrt{\frac{(0.557)^2 \times 0.1 + (0.139)^2 \times 0.9 + (0.279)^2 \times 0.1}{1.5}}$$

$= 0.19$ (N · m) < Rated torque...Satisfactory

The capacities of the servo motor and servo drive selected temporarily based on preceding steps are available for use. The position control analysis is as follows.

9. **Electronic gear ratio (B/A)**

The electrical stopping precision (δ) is ±0.01 mm, so the position detection unit (△L) is 0.01 mm/pulse.

$$\frac{P_B}{\Delta L} \times \frac{B}{A} = \frac{5}{0.01} \times \frac{B}{A} = 67108864$$

$$\frac{B}{A} = \frac{67108864 \times 0.01}{5} = \frac{67108864}{500}$$

10. **Reference pulse frequency**

$$v_s = \frac{1000 \times V_L}{60 \times \Delta L} = \frac{1000 \times 15}{60 \times 0.01} = 25000 \text{ (pps)}$$

11. **Offset counter droop pulse**

- Set the position loop gain (Kp) to 30 (I/s).

$$\varepsilon = \frac{v_s}{K_p} = \frac{25000}{30} = 833 \text{ (pulse)}$$

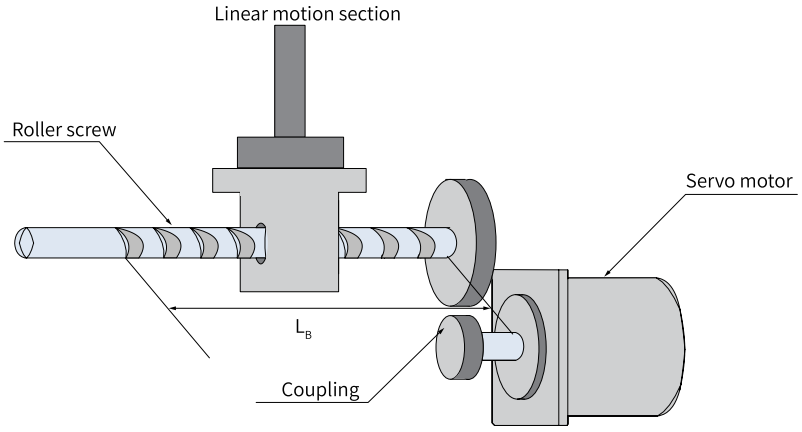
- Electrical stop precision

$$\pm\Delta\varepsilon = \pm\frac{\varepsilon}{(\text{Servo drive control range}) \times \frac{n_M}{n_R}} = \pm\frac{833}{5000 \times \frac{3000}{3000}}$$

$$= \pm 0.17 < \pm 1\ (\text{pulse}) \pm 0.01\ (\text{mm/pulse})$$

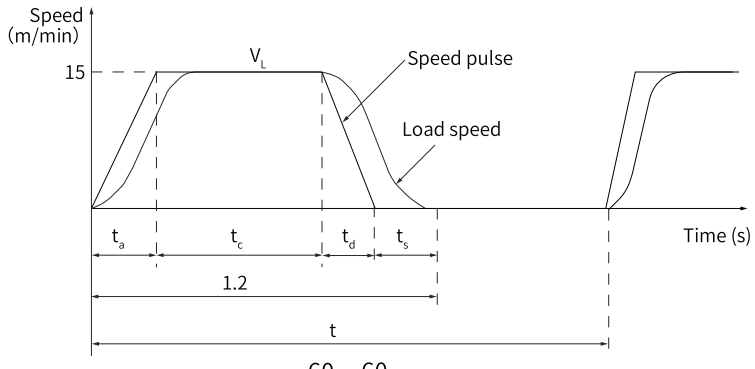
By observing preceding steps, the servo motor and servo drive selected temporarily for position control are available for use.

6.2 Capacity Selection Example for Speed Control



Load speed (V_L) = 15 m/min
Mass of the rectilinear motion part (m): 80 kg
Roller screw length (L_B): 0.8 m
Roller screw diameter (d_B): 0.04 m
Roller screw lead (P_B): 0.01 m
Coupling mass (m_c): 1 kg
Coupling outer diameter (d_c): 0.06 m
Times of feeding (n): 40/min
Length of feeding (L): 0.25 m
Feeding time (t_m) < 1.2s
Friction coefficient (μ): 0.2
Mechanical efficiency (η) = 0.9 (90%)

1. **Speed diagram**



$$t = \frac{60}{n} = \frac{60}{40} = 1.5(s)$$

Set t_a to the same value as t_d.

$$t_a = t_m - t_s - \frac{60 \times L}{V_L} = 1.2 - 0.1 - \frac{60 \times 0.25}{15} = 0.1(s)$$

$$t_c = 1.2 - 0.1 - 0.1 \times 2 = 0.9(s)$$

2. **Speed**

- Rotational speed of the load shaft

$$n_L = \frac{V_L}{P_B} = \frac{15}{0.01} = 1500 \text{ (rpm)}$$

- Rotational speed of the motor shaft
  As the coupling is directly connected, the gear ratio (1/R) is 1:1.

$$n_M = n_L \times R = 1500 \times 1 = 1500 \text{ (rpm)}$$

3. Load torque

$$T_L = \frac{9.8 \mu \times m \times P_B}{2\pi \times R \times \eta} = \frac{9.8 \times 0.2 \times 80 \times 0.01}{2\pi \times 1 \times 0.9} = 0.277 \text{ (N·m)}$$

4. **Load moment of inertia**

- Rectilinear motion part

$$J_{LI} = m \times \left(\frac{P_B}{2\pi R}\right)^2 = 80 \times \left(\frac{0.01}{2\pi \times 1}\right)^2 = 2.02 \times 10^{-4} \text{ (kg·m}^2\text{)}$$

- Roller screw

$$J_B = \frac{\pi}{32} P \times L_B \times d_B^4 = \frac{\pi}{32} \times 7.87 \times 10^3 \times 1.4 \times (0.04)^4 = 27.7 \times 10^{-4} \text{ (kg·m}^2\text{)}$$

- Coupling

$$J_C = \frac{1}{8} m_c \times d_c^4 = \frac{1}{8} \times 1 \times (0.06)^2 = 4.5 \times 10^{-4} \text{ (kg·m}^2\text{)}$$

5. **Load moving power**

$$P_O = \frac{2\pi \times n_M \times T_L}{60} = \frac{2\pi \times 1500 \times 0.277}{60} = 43.6 \text{ (W)}$$

6. **Load acceleration power**

$$P_a = \left(\frac{2\pi}{60} \times n_m\right)^2 \times \frac{J_L}{t_a} = \left(\frac{2\pi}{60} \times n_m\right)^2 \times \frac{J_C + J_B + J_{LI}}{t_a}$$

$$= \left(\frac{2\pi}{60} \times 1500\right)^2 \times \frac{34.22 \times 10^{-4}}{0.1} = 844 \text{ (W)}$$

7. **Temporary settings of the servo motor**

- Selection condition
  $T_L \leqslant$ Rated torque of the motor

  $P_a + P_o$ = (1 to 2) x Rated output of the motor

  $n_M \leqslant$ Rated speed of the motor

  $J_L \leqslant$ Allowable load moment of inertia of the servo unit

Perform the following provisional selections according to preceding conditions:

Servo motor: MS1H4-75B30CB-A630R

Servo drive: SV670PS5R5I

- Specifications of the servo motor and servo drive
  Rated output: 750 (W)

  Rated speed: 3000 (RPM)

  Rated torque: 2.39 (N·m)

  Maximum instantaneous torque: 8.365 (N·m)

  Rotor moment of inertia: 1.38 x 10^{-4} (kg·m^2)

  Allowable load moment of inertia: 69.58 x 10^{-4} (kg·m^2)

8. **Confirmation of the servo motor selected temporarily**

Confirm the startup torque required

$$T_p = \frac{2\pi \times n_M \times (J_M + J_L)}{60 \times t_a} + T_L = \frac{2\pi \times 1500 \times (1.38 + 34.22) \times 10^{-4}}{60 \times 0.1} + 0.277$$

$$= 5.87\ (N \cdot m) < \text{Max. instantaneous torque...Satisfactory}$$

Confirm the brake torque required

$$T_s = \frac{2\pi \times n_M \times (J_M + J_L)}{60 \times t_a} - T_L = \frac{2\pi \times 1500 \times (1.38 + 34.22) \times 10^{-4}}{60 \times 0.1} - 0.277$$

$$= 5.32\ (N \cdot m) < \text{Max. instantaneous torque...Satisfactory}$$

Confirm the effective torque value

$$T_{rms} = \sqrt{\frac{T_p^2 \times t_a + T_L^2 \times t_c + T_s^2 \times t_d}{t}}$$

$$= \sqrt{\frac{(5.87)^2 \times 0.1 + (0.277)^2 \times 0.9 + (5.32)^2 \times 0.1}{1.5}}$$

$$= 2.06(N \cdot m) < \text{Rated torque…Satisfactory}$$

9. **Selection result**

The servo motor and servo drive selected temporarily according to preceding steps are available for use. The torque diagram is as follows.

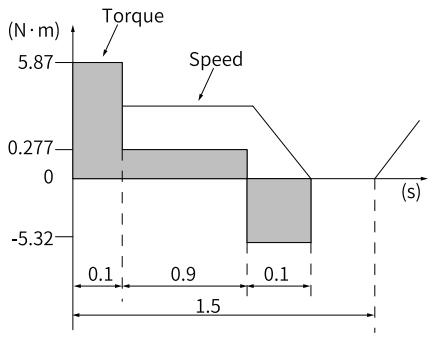


Figure 6-1 Torque diagram

7 Standards Compliance

CE Certification

Directive	Standard	
EMC Directive 2014/30/EU	Servo Drive	EN 61800-3
	Servo motor	EN 61800-6-2 EN 61800-6-4 EN 55011
Low Voltage Directive 2014/35/EU	Servo Drive	EN 61800-5-1
	Servo motor	EN 60034-1 EN 60034-5
RoHS Directive 2011/65/EU	Servo Drive	EN 50581
	Servo motor	

UL/cUL certification

Certification	Standard	
UL/cUL certification	Servo Drive	UL61800-5-1 C22.2 No.274-17
	Servo motor	UL 1004-1 UL 1004-6 CSA C22.2 No. 100-14

Note

- The product complies with the latest version of directives and standards for CE and UL/cUL certifications.
- The product complies with UKCA certification.

PS00017523A00

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