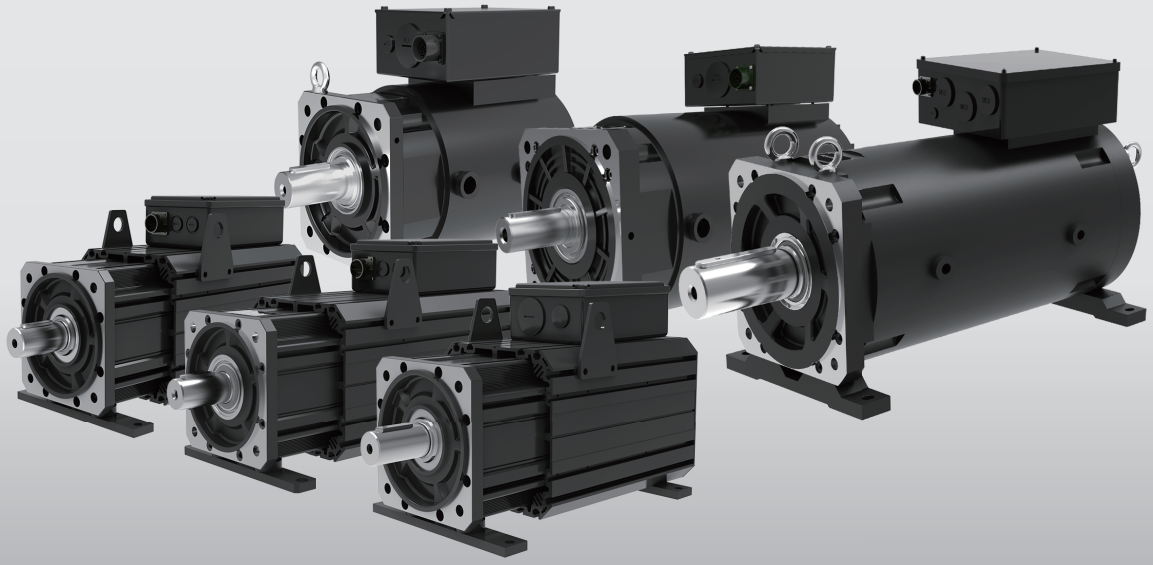
INOVANCE

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ISMG Series Servo Motor

Selection Guide

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

Data code PS00017275A00

Preface

Introduction

The ISMG series air-cooled permanent magnet motor is a general-purpose high-power servo motor that comes with two variants, ISMG1 and ISMG2. The ISMG series motor is equipped with a 23-bit absolute encoder and features low temperature rise, low current, and high overspeed capacity. It adopts low rotor inertia design to ensure high responsiveness of the motor. The ISMG1 series motors includes models with brakes.

This user guide presents motor information, specifications, and dimension drawings. If you have any question on product function and performance, contact Inovance for technical support.

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

Revision History

Date	Version	Description
Sept 2024	A00	First 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 searching 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.

Warranty Disclaimer

Inovance provides warranty service within the warranty period (as specified in your order) for faults or damage that occur during normal operation. 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 abnormal 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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Fundamental Safety Instructions

Safety Disclaimer

- This chapter provides essential safety instructions for proper use of the equipment. Before operating the equipment, read through the guide and comprehend all the safety instructions. Failure to observe the safety precautions may result in serious injuries or death of personnel or device damage.
- "Danger", "Warning", and "Caution" items in this guide do not indicate all safety precautions that need to be followed; instead, they just supplement the safety precautions.
- Use this product according to the designated environment requirements. Damage caused by improper use is not covered by warranty.
- Inovance shall take no responsibility for any personal injuries or property damage caused by improper usage.

Safety Levels and Definitions



Indicates that failure to comply with the notice will result in death or severe personal injuries.



Indicates that failure to comply with the notice may result in death or severe personal injury.



Indicates that failure to comply with the notice may result in minor or moderate personal injury or equipment damage.

Safety Precautions

- Drawings in the 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 guide are shown for illustration only and may be different from the product you purchased.
- Operators must take mechanical precautions to protect personal safety and wear protective equipment, such as anti-smashing shoes, safety clothing, safety glasses, protective gloves, and protective sleeves.

Unpacking
WARNING • Do not install the equipment if you find damage, rust, or signs of use on the equipment or accessories upon unpacking. • Do not install the equipment if you find water seepage or missing or damaged components upon unpacking. • Do not install the equipment if you find the packing list does not conform to the equipment you received.
CAUTION • Check whether the packing is intact and whether there is damage, water seepage, dampness, and deformation before unpacking. • Unpack the package by following the unpacking sequence. Do not strike the package violently. • Check whether there is damage, rust, or signs of bumping on the surface of the equipment and equipment accessories before unpacking. • Check whether the package contents are consistent with the packing list before unpacking.

Storage and Transportation
WARNING • Large-scale or heavy equipment must be transported by qualified professionals using specialized hoisting equipment. Failure to comply may result in personal injuries or equipment damage. • Before hoisting the equipment, ensure the components such as the front cover and terminal blocks are secured firmly with screws. Loosely-connected components may fall off and result in personal injury or equipment damage. • Never stand or stay below the equipment when the equipment is being hoisted by the hoisting equipment. • When hoisting the equipment with a steel rope, ensure the equipment is hoisted at a constant speed without suffering from vibration or shock. Do not turn the equipment over or let the equipment stay hanging in the air. Failure to comply may result in personal injuries or equipment damage.
CAUTION • Handle the equipment with care during transportation and mind your steps to prevent personal injuries or equipment damage. • When carrying the equipment with bare hands, hold the equipment casing firmly with care to prevent parts from falling. Failure to comply may result in personal injuries. • Store and transport the equipment based on the storage and transportation requirements. Failure to comply will result in equipment damage. • Avoid storing or transporting the equipment in environments with water splash, rain, direct sunlight, strong electric field, strong magnetic field, and strong vibration. • Avoid storing the product for more than 3 months. When the product needs to be stored for an extended period, take more strict protection and necessary inspection. • Pack the equipment strictly before transportation. Use a sealed box for long-distance transportation. • Never transport the equipment with other equipment or materials that may harm or have negative impacts on this equipment.

Installation
DANGER • The equipment can only be operated by professionals with electrical knowledge. Non-professionals are not allowed to operate on the equipment.
WARNING • Read through the guide and safety instructions before installation. • Do not install this equipment in places with strong electric or magnetic fields. • Before installation, check that the mechanical strength of the installation site can bear the weight of the equipment. Failure to comply will result in mechanical hazards. • Do not wear loose clothes or accessories during installation. Failure to comply may result in an electric shock. • When installing the equipment in a closed environment (such as a cabinet or casing), use a cooling device (such as a fan or air conditioner) to cool the environment down to the required temperature. Failure to comply may result in equipment over-temperature or a fire. • Do not retrofit the equipment. • Do not fiddle with the bolts used to fix equipment components or the bolts marked in red. • When the equipment is installed in a cabinet or final assembly, a fireproof enclosure providing both electrical and mechanical protections must be provided. The IP rating must meet IEC standards and local laws and regulations. • Before installing devices with strong electromagnetic interference, such as a transformer, install a shielding device for the equipment to prevent malfunction. • Install the product on an incombustible object such as metal and do not touch or attach the product to combustibles. Failure to comply can result in fire accident.
CAUTION • Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the equipment and causing faults. After installation, remove the cloth or paper on top of the equipment to prevent over-temperature caused by poor ventilation due to blocked ventilation holes. • Resonance may occur when the equipment operating at a constant speed executes variable speed operations. In this case, install the vibration-proof rubber under the motor frame or use the vibration suppression function to reduce resonance.

Wiring
DANGER • Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals. • Before wiring, disconnect all the power supplies of the equipment, and wait for at least the time designated on the equipment warning label before further operations because residual voltage still exists after power-off. Measure the DC voltage of the main circuit and ensure that the voltage is within the safety range. Failure to comply can result in an electric shock. • Do not perform wiring, remove the equipment cover, or touch the circuit board with power ON. Failure to comply will result in an electric shock. • Check that the equipment is grounded properly. Failure to comply can result in an electric shock.
WARNING • Do not connect the input power supply to the output end of the equipment. Failure to comply can result in equipment damage or even a fire. • When connecting a drive to the motor, check that the phase sequences of the drive and motor terminals are consistent to prevent reverse motor rotation. • Cables used for wiring must meet cross sectional area and shielding requirements. The shield of the cable must be reliably grounded at one end. • Fix the terminal screws with the tightening torque specified in the user guide. Improper tightening torque may overheat or damage the connecting part, resulting in a fire. • After wiring is done, check that all cables are connected properly and no screws, washers or exposed cables are left inside the equipment. Failure to comply may result in electric shock or equipment damage.
CAUTION • Follow the proper electrostatic discharge (ESD) procedure and wear an anti-static wrist strap to perform wiring. Failure to comply may result in damage to the equipment or to the internal circuit of the product. • Use shielded twisted pairs for the control circuit. Connect the shield to the grounding terminal of the equipment for grounding purpose. Failure to comply can result in equipment malfunction.

Power-on
DANGER • Before power-on, check that the equipment is installed properly with reliable wiring and the motor can be restarted. • Check that the power supply meets equipment requirements before power-on to prevent equipment damage or a fire. • Do not open the cabinet door or protective cover of the product, touch any wiring terminal of the product, or remove any part of the product with power on. Failure to comply can result in an electric shock.
WARNING • Perform a trial run after wiring and parameter setting to ensure the equipment operates safely. Failure to comply may result in personal injuries or equipment damage. • Before power-on, check that the rated voltage of the equipment is consistent with that of the power supply. Failure to comply may result in a fire. • Before power-on, check that no one is near the equipment, motor, or machine. Failure to comply may result in death or personal injury.

Operation state
 • The equipment must be operated only by professionals. Failure to comply can result in death or personal injury. • Do not touch any connecting terminals or disassemble any unit or component of the equipment during operation. Failure to comply can result in an electric shock.
 • Do not touch the equipment casing, fan, or resistor with bare hands to feel the temperature. Failure to comply may result in personal injuries. • Prevent metal or other objects from falling into the equipment during operation. Failure to comply may result in a fire or equipment damage.

Maintenance
 • Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals. • Do not maintain the equipment with power ON. Failure to comply will result in an electric shock. • Before maintenance, disconnect all the power supplies of the equipment and wait for at least the time designated on the equipment warning label. • When a permanent magnet motor is used, do not touch the motor terminals immediately after power-off because the motor terminals can generate induced voltage during rotation even after the equipment power supply is off. Failure to comply will result in an electric shock.
 • Perform routine and periodic inspection and maintenance on the equipment according to maintenance requirements and keep a maintenance record.

Repair
 • Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals. • Do not repair the equipment with power ON. Failure to comply can result in an electric shock. • Before inspection and repair, cut off all the power supplies of the equipment and wait for at least the time designated on the equipment warning label.
 • Submit the repair request according to the warranty agreement. • When the fuse is blown or the circuit breaker or earth leakage current breaker (ELCB) trips, wait for at least the time designated on the equipment warning label before power-on or further operations. Failure to comply may result in death, personal injury or equipment damage. • When the equipment is faulty or damaged, the troubleshooting and repair work must be performed by professionals that follow the repair instructions, with repair records kept properly. • Replace quick-wear parts of the equipment according to the replacement instructions. • Do not operate on damaged equipment. Failure to comply may result in death, personal injury, or severe equipment damage. • After the equipment is replaced, check the wiring and set parameters again.

Disposal
WARNING • Dispose of retired equipment in accordance with local regulations and standards. Failure to comply may result in property damage, personal injuries, or even death. • Recycle retired equipment by observing industry waste disposal standards to avoid environmental pollution.

Safety Labels

For safe operation and maintenance, comply with the safety labels on the equipment. Do not damage or remove the safety labels. See the following table for descriptions of the safety labels.

Safety Label	Description
	Indicates that the user guide must be read through before you install or operate on the equipment.
	Indicates that the system and product must be grounded properly.
	Indicates danger may exist.
	Indicates high voltage may exist.
	Indicates personal injury may occur.
	Indicates high temperature may exist.

1 Model Selection

Motor series		Servo motor model	Servo drive model	
			IS810 series	IS650 series
ISMG series air-cooled motor	ISMG1	ISMG1-95C15CD-A331FA	IS810N50M4TD017INT	IS650P025I
		ISMG1-95C15CD-A334FA	IS810N50M4TD017INT	IS650P025I
		ISMG1-12D20CD-A331FA	IS810N50M4TD021INT	IS650P032I
		ISMG1-12D20CD-A334FA	IS810N50M4TD021INT	IS650P032I
		ISMG1-14D15CD-A331FA	IS810N50M4TD026INT	IS650P037I
		ISMG1-14D15CD-A334FA	IS810N50M4TD026INT	IS650P037I
		ISMG1-17D15CD-A331FA	IS810N50M4TD032INT	IS650P037I
		ISMG1-17D15CD-A334FA	IS810N50M4TD032INT	IS650P037I
		ISMG1-18D20CD-A331FA	IS810N50M4TD032INT	IS650P037I
		ISMG1-18D20CD-A334FA	IS810N50M4TD032INT	IS650P037I
		ISMG1-22D15CD-A331FA	IS810N50M4TD037INT	IS650P045I
		ISMG1-22D15CD-A334FA	IS810N50M4TD037INT	IS650P045I
		ISMG1-23D20CD-A331FA	IS810N50M4TD037INT	IS650P060I
		ISMG1-23D20CD-A334FA	IS810N50M4TD037INT	IS650P060I
		ISMG1-28D20CD-A331FA	IS810N50M4TS075INT-P	IS650P060I
		ISMG1-28D20CD-A334FA	IS810N50M4TS075INT-P	IS650P060I
		ISMG1-30D15CD-A331FA	IS810N50M4TS075INT-P	IS650P060I
		ISMG1-30D15CD-A334FA	IS810N50M4TS075INT-P	IS650P060I
		ISMG1-41D20CD-A331FA	IS810N50M4TS075INT-P	IS650P091I
		ISMG1-41D20CD-A334FA	IS810N50M4TS075INT-P	IS650P091I
	ISMG2	ISMG2-31D15CD-A331FA	IS810N50M4TS075INT-P	IS650P060I
		ISMG2-42D15CD-A331FA	IS810N50M4TS075INT-P	IS650P091I
		ISMG2-42D20CD-A331FA	IS810N50M4TS075INT-P	IS650P091I
		ISMG2-52D15CD-A331FA	IS810N50M4TS090INT	IS650P112I
		ISMG2-57D20CD-A331FA	IS810N50M4TS090INT	IS650P091I
		ISMG2-60D15CD-A331FA	IS810N50M4TS112INT	IS650P112I
ISMG air-cooled high inertia series	ISMG1	ISMG1-12D30CD-A331FA-GL	IS810N50M4TD026INT	IS650P025I
		ISMG1-17D33CD-A311FA-GL	IS810N50M4TD032INT	IS650P032I
		ISMG1-29D30CD-A3A1FA-GL	IS810N50M4TS075INT-P	IS650P060I
	ISMG2	ISMG2-18D30CD-A3A1FA-GL	IS810N50M4TD037INT	IS650P037I
ISMG water-cooled high inertia series	ISMG1	ISMG1-22D30CD-A3A1L-GL	IS810N50M4TS075INT-P	IS650P045I
		ISMG1-45D30CD-A3A1L-GL	IS810N50M4TS090INT	IS650P091I
		ISMG1-55D30CD-A3A1L-GL	IS810N50M4TS112INT	IS650P112I
	ISMG2	ISMG2-92D38CD-A3B1L-GL	IS810N50M4TS240INT	-

Note

The IS810P, IS810F, and IS650P series drives do not support flux weakening function.

2 Product Information

2.1 Model and Nameplate

Model description

ISM G1 - 30D 15C D - A3 3 1 F A - **
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① **Product type** ISM: General-purpose servo motor	④ **Rated speed (rpm)** One letter and two digits B: x 10 C: x 100 Example: 15C: 1500 rpm	⑧ **Brake, reducer, oil seal** 1: With oil seal but no brake 4: Oil seal+Brake (ISMG2 series brake-less model)
② **Flange size** G1: 200 x 200 G2: 266 x 266	⑤ **Voltage class (V)** D: 380	⑨ **Cooling mode** X: Natural cooling F: Fan cooling L/W: Water-cooling
③ **Rated power in S4 duty (W)** One letter and two digits C: x 100 D: x 1000 E: x 10000 Example: 30D: 30000 W	⑥ **Encoder type** One letter and one digit A3: 23-bit multi-turn absolute encoder	⑩ **Product code** A: Second generation
	⑦ **Shaft Connection Mode** 1: Plain shaft 3: Solid and keyed with tapped hole A: Solid and keyed, with threaded hole and built-in rotor	⑪ **Product code** GL: High inertia

Note

For international versions (INT models), contact Inovance.

Nameplate description

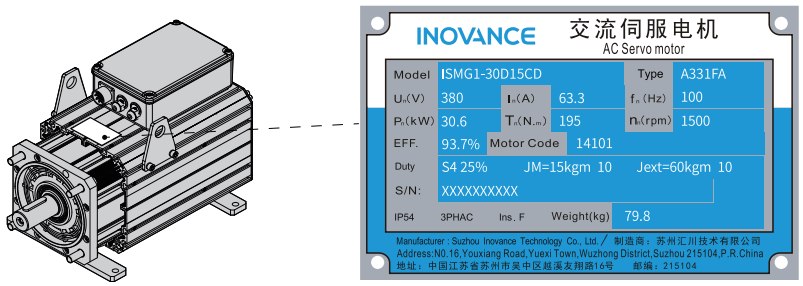
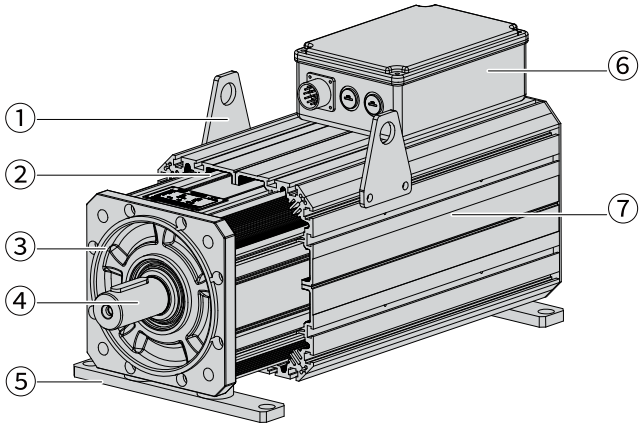


Figure 2-1 Model and Nameplate

Note

The nameplate is rated under the S4 duty.

2.2 Components



No.	Name	No.	Name
①	Hanger plate	⑤	Mounting baseplate [1]
②	Enclosure	⑥	Junction box
③	Front end cover	⑦	Air duct
④	Shaft	-	-

Note

[1]The bottom plate is only available for some models. The bottom plate is not available for water-cooled series motors or air-cooled series motors.

- ISMG1-95C15CD-A331FA
- ISMG1-12D20CD-A331FA
- ISMG1-14D15CD-A331FA
- ISMG1-18D20CD-A331FA
- ISMG1-17D15CD-A331FA
- ISMG1-23D20CD-A331FA
- ISMG1-12D30CD-A331FA-GL

3 Product Specifications

3.1 Mechanical Characteristics

Item	Description
Duty type	Continuous S1
Insulation resistance	500 VDC 50 MΩ above
Ambient temperature	-20°C to +40°C (non-frozen)
Ambient humidity	20% RH to 90% RH (without condensation)
Storage temperature	-20°C to +60°C (non-frozen) (Peak temperature assurance: 80°C for 72 hours)
Storage humidity	20% RH to 90% RH (without condensation)
Installation mode	IM B35/B5
Insulation class	F
Insulation voltage	1800 VAC for 1 min (380 V class)
IP rating of enclosure	IP54
Cooling mode	IC416
Shock resistance [2]	Below 200 m/s^2, two times
Radial vibration resistance [3][4]	Below 49 m/s^2
Axial vibration resistance [3][4]	Below 49 m/s^2
Fan type	Single-phase centrifugal fan
Fan power	ISMG1: 41 W ISMG2: 134 W
Fan voltage	220/230 VAC
Fan frequency	50/60 Hz
Threshold of built-in PTC	130°C
KTY resistance at a temperature range of 10°C to 30°C	514 Ω to 652 Ω
Certification	CE
Number of motor pole pairs: 2	8
Winding mode	Y
Excitation mode	Permanent magnetic
Direction of rotation	Rotates counterclockwise (CCW) when viewed from the load side with the forward run command.

Note

- [1] Definition of installation mode:
  - B35: The motor can be installed through the feet or flange.
  - B3: The motor is fixed through the feet of the base.
  - B5: The motor is fixed through the flange.
- [2] 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.
- [3] For a servo motor shaft mounted horizontally, the vibration resistance level in the up/down, left/right, and front/rear directions is shown in the preceding table.
- [4] 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.

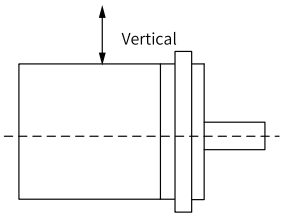


Figure 3-1 Shock applied on the motor

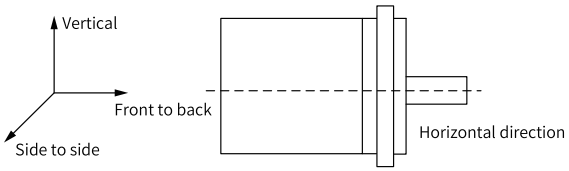


Figure 3-2 Vibration applied on the motor

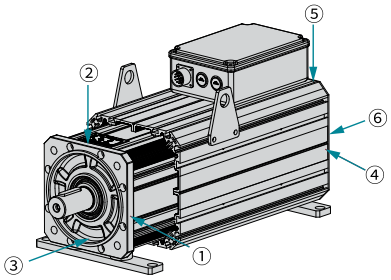


Figure 3-3 Max. allowable vibration limit of the motor

Direction	Measuring point	Limit value (10 Hz to 2000 Hz)
Radial	①② (Radial motor flange)	Below 49 m/s^2
	④⑤ (Radial bearing dust-proof ring/fan/ encoder)	Below 49 m/s^2
Axial	③ (Axial motor flange)	Below 49 m/s^2
	⑥ (Axial bearing dust-proof ring/fan/encoder)	Below 49 m/s^2

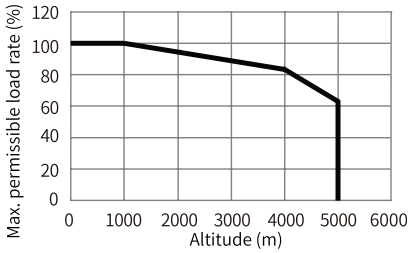
3.2 Derating Characteristics

Altitude-based derating

No derating is required if the motor is used in altitudes below 1000 m. Derating is required for altitudes above 1000 m.

Altitude-based Derating	1000 m	2000 m	3000 m	4000 m	5000 m
	1	0.947	0.887	0.824	0.645

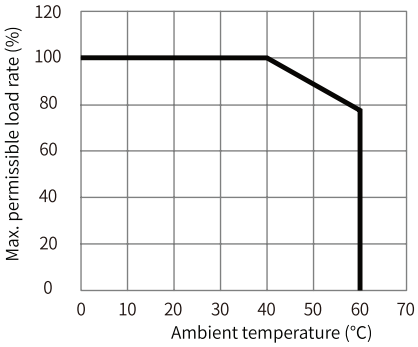
Altitude-based derating curve is shown below.



Temperature-based derating

Temperature-based derating	40°C	45°C	50°C	55°C	60°C
	1	0.952	0.901	0.855	0.781

The temperature-based derating curve is shown below.



3.3 Electrical Specifications of the Brake

When determining the length of the motor brake cable, take the voltage drop caused by cable resistance into account. The input voltage must be at least 21.6 V to enable the brake to work properly.

For performance specifications of ISMG brake motors, see *"3.1 Mechanical Characteristics" on page 14*. The brake specifications are as follows.

Motor model ISMG1-*******-A334FA	Holding torque (N·m)	Supply voltage (VDC)±10%	Rated power (W)	Coil resistance (Ω)±5% at 20°C	Exciting current (A)±10% at 20°C	Apply time (ms)	Release time (ms)	Backlash (°)
95C15CD	150	24	70	8.2	2.9	225	301	0.3 to 0.5
12D20CD								
14D15CD								
17D15CD								
18D20CD								
22D15CD	150	24	70	8.2	2.9	225	301	0.3 to 0.5
23D20CD								
28D20CD								
30D15CD								
41D20CD								

Note

The brake apply time and release time in the preceding table are based on the values measured at 20°C under the supply voltage.

Motor models in the preceding table are named based on S4 duty.

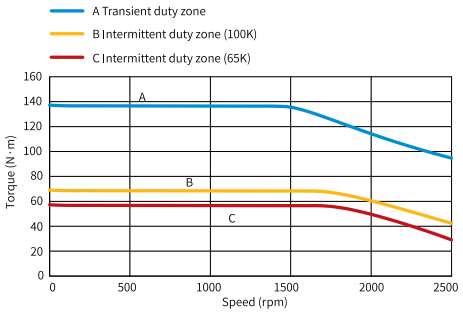
- S1 (IEC 60034-1): continuous duty
  The duty type S1 is defined as operation at a constant load main
  tained for sufficient time to allow the machine to reach thermal equilibrium.
- S4 (IEC 60034-1): intermittent periodic duty with starting The duty type S4 is defined as a sequence of identical duty cycles, each cycle including a significant starting time, a time of operation at constant load and a time de-energized and at rest. Note: For other motor specifications and models, contact Inovance sales staff.

4 ISMG Series Air-cooled Motor

4.1 ISMG1-95C15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	7.9
Rated power (S4)	P_N	kW	9.5
Rated current (S1)	I_N	A	15.4
Rated current (S4)	I_N	A	18.50
Rated torque (S1)	T_N	N·m	50.0
Rated torque (S4)	T_N	N·m	60.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.24
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	135
Max. current	$I_{max.}$	A	43.2
Rotor moment of inertia	J_m	kg·cm^2	75
Back EMF constant at 20°C	K_e	V/krpm	207.9
Rated point efficiency	n	%	91
D-axis inductance	L_d	mH	8.08
Q-axis inductance	L_q	mH	8.08
Phase resistance at 20°C	R_{phi}	mΩ	480.00
Net weight	-	kg	45.2

Torque-Speed characteristics*

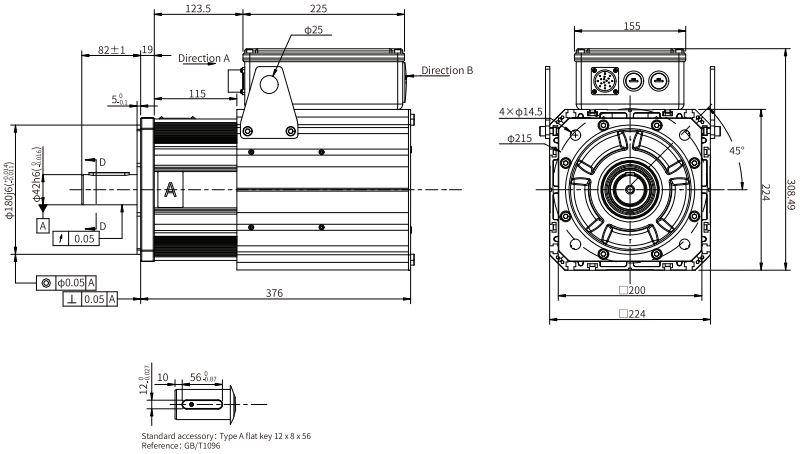


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

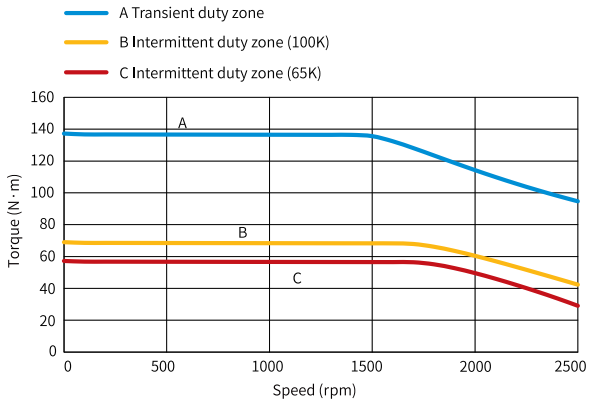
Product dimensions (mm)



4.2 ISMG1-95C15CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	7.9
Rated power (S4)	P_N	kW	9.5
Rated current (S1)	I_N	A	15.4
Rated current (S4)	I_N	A	18.50
Rated torque (S1)	T_N	N·m	50.0
Rated torque (S4)	T_N	N·m	60.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.24
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	135
Max. current	$I_{max.}$	A	43.2
Rotor moment of inertia	J_m	kg·cm^2	75
Back EMF constant at 20°C	K_e	V/krpm	207.9
Rated point efficiency	n	%	91
D-axis inductance	L_d	mH	8.08
Q-axis inductance	L_q	mH	8.08
Phase resistance at 20°C	R_{phi}	mΩ	480.00
Net weight	-	kg	53.2

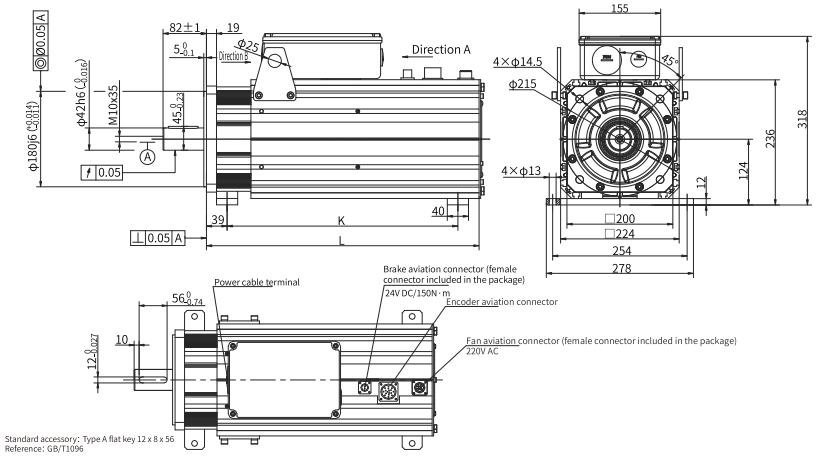
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

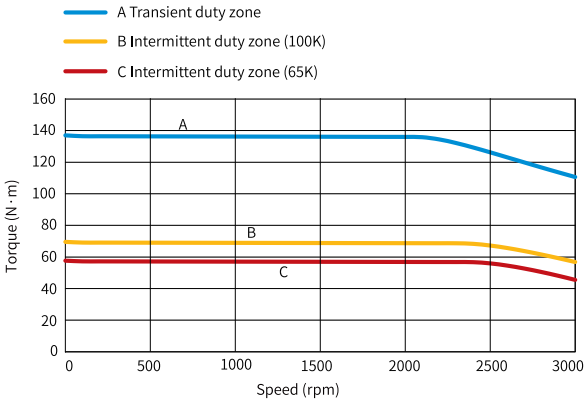


Motor model	L (mm)	K (mm)
ISMG1-95C15CD-A334A	484	396

4.3 ISMG1-12D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	10.5
Rated power (S4)	P_N	kW	12.6
Rated current (S1)	I_N	A	20.8
Rated current (S4)	I_N	A	26.00
Rated torque (S1)	T_N	N·m	50.0
Rated torque (S4)	T_N	N·m	60.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.31
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	135
Max. current	$I_{max.}$	A	60.4
Rotor moment of inertia	J_m	kg·cm^2	75
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	94.1
D-axis inductance	L_d	mH	4.12
Q-axis inductance	L_q	mH	4.12
Phase resistance at 20°C	R_{phi}	mΩ	240.00
Net weight	-	kg	45.2

Torque-Speed characteristics*

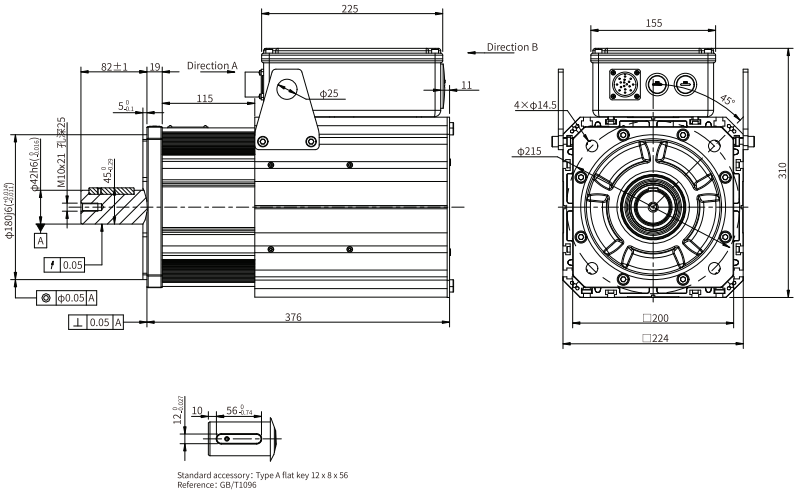


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

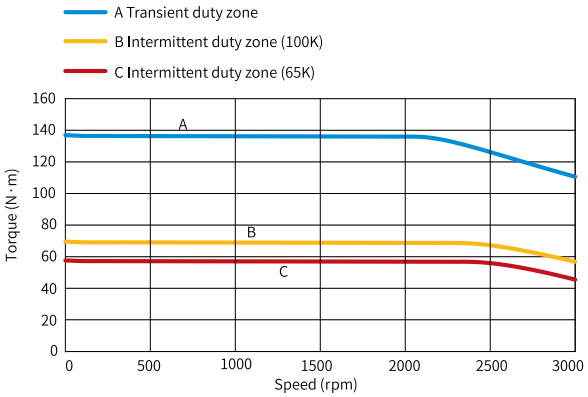
Product dimensions (mm)



4.4 ISMG1-12D20CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	10.5
Rated power (S4)	P_N	kW	12.6
Rated current (S1)	I_N	A	20.8
Rated current (S4)	I_N	A	26.00
Rated torque (S1)	T_N	N·m	50.0
Rated torque (S4)	T_N	N·m	60.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.31
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	135
Max. current	$I_{max.}$	A	60.4
Rotor moment of inertia	J_m	kg·cm^2	75
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	94.1
D-axis inductance	L_d	mH	4.12

Torque-Speed characteristics*

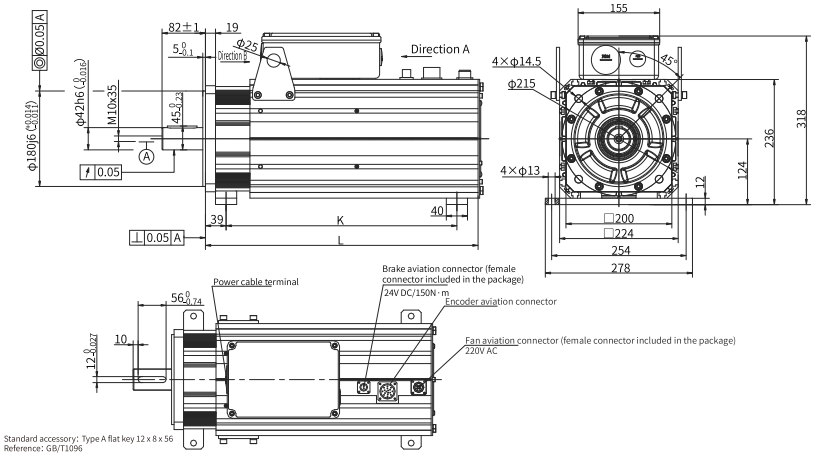


Motor specifications			
Item		Unit	Specification
Q-axis inductance	L_q	mH	4.12
Phase resistance at 20℃	R_{phi}	mΩ	240.00
Net weight	-	kg	53.2

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

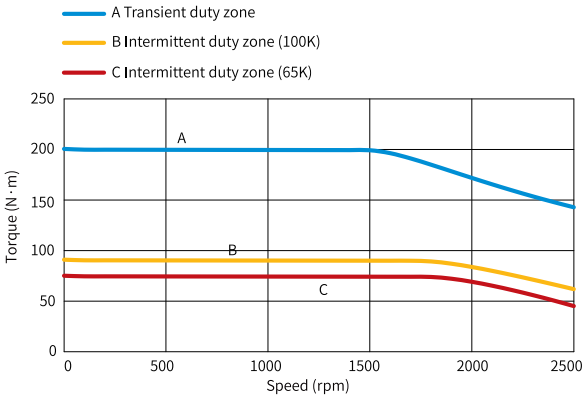


Motor model	L (mm)	K (mm)
ISMG1-12D20CD-A334FA	484	396

4.5 ISMG1-14D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	11.8
Rated power (S4)	P_N	kW	14.1
Rated current (S1)	I_N	A	24.4
Rated current (S4)	I_N	A	29.20
Rated torque (S1)	T_N	N·m	75.0
Rated torque (S4)	T_N	N·m	90.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.07
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	203
Max. current	$I_{max.}$	A	68.3
Rotor moment of inertia	J_m	kg·cm^2	90
Back EMF constant at 20°C	K_e	V/krpm	198
Rated point efficiency	n	%	92
D-axis inductance	L_d	mH	5.38
Q-axis inductance	L_q	mH	5.38
Phase resistance at 20°C	R_{phi}	mΩ	282.80
Net weight	-	kg	51.9

Torque-Speed characteristics*

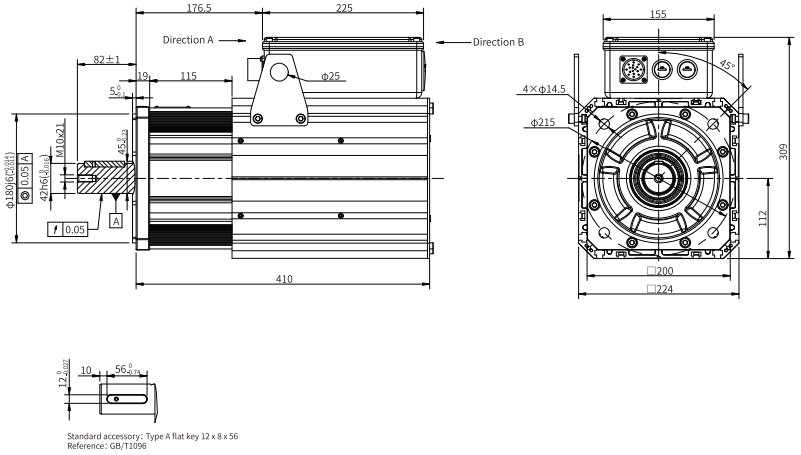


Connector Model	
Connector type	Encoder Side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

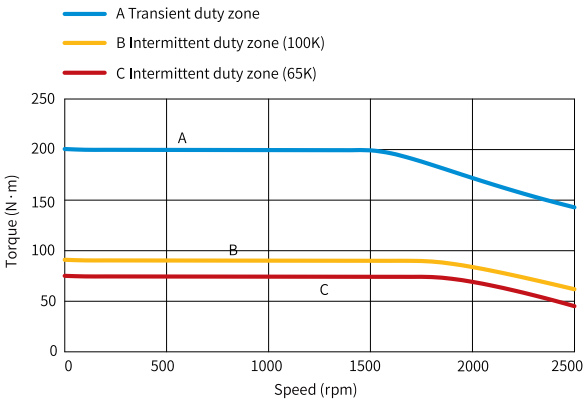
Product dimensions (mm)



4.6 ISMG1-14D15CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	11.8
Rated power (S4)	P_N	kW	14.1
Rated current (S1)	I_N	A	24.4
Rated current (S4)	I_N	A	29.20
Rated torque (S1)	T_N	N·m	75.0
Rated torque (S4)	T_N	N·m	90.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.07
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	203
Max. current	$I_{max.}$	A	68.3
Rotor moment of inertia	J_m	kg·cm^2	90
Back EMF constant at 20°C	K_e	V/krpm	198
Rated point efficiency	n	%	92
D-axis inductance	L_d	mH	5.38
Q-axis inductance	L_q	mH	5.38
Phase resistance at 20°C	R_{phi}	mΩ	282.80
Net weight	-	kg	59.9

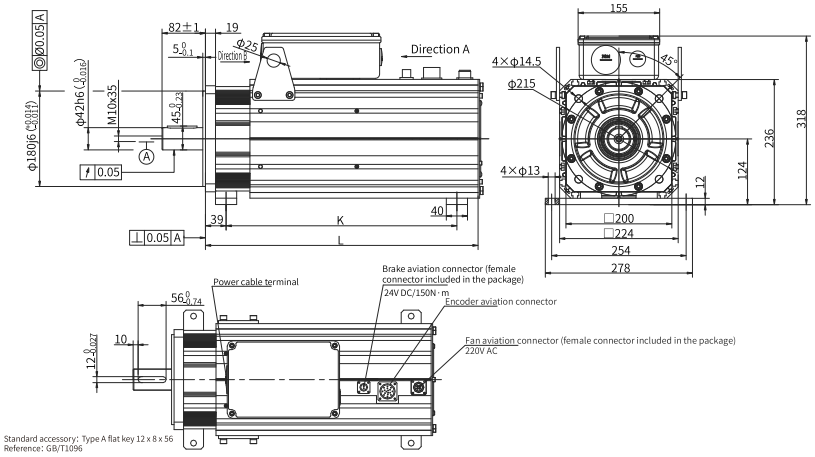
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

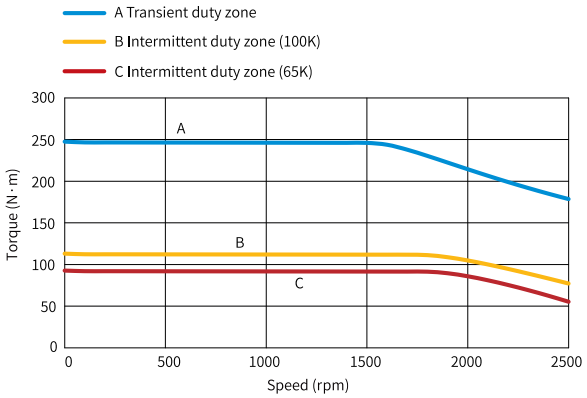


Motor model	L (mm)	K (mm)
ISMG1-14D15CD-A334FA	518	436

4.7 ISMG1-17D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	14.5
Rated power (S4)	P_N	kW	17.3
Rated current (S1)	I_N	A	29.9
Rated current (S4)	I_N	A	35.7
Rated torque (S1)	T_N	N·m	92.0
Rated torque (S4)	T_N	N·m	110.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.08
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	248
Max. current	$I_{max.}$	A	86.5
Rotor moment of inertia	J_m	kg·cm^2	105
Back EMF constant at 20°C	K_e	V/krpm	198

Torque-Speed characteristics*



Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

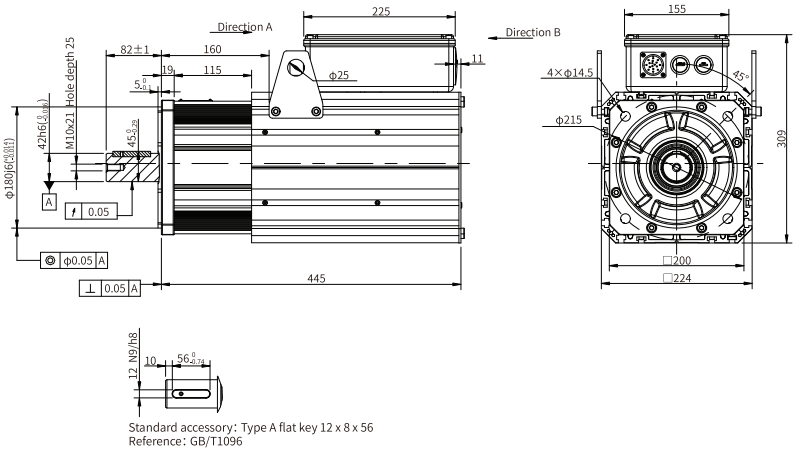
Motor specifications			
Item		Unit	Specification
Rated point efficiency	n	%	92.5
D-axis inductance	L_d	mH	4.12
Q-axis inductance	L_q	mH	4.12
Phase resistance at 20°C	R_{phi}	mΩ	200.35
Net weight	-	kg	59

Torque-Speed characteristics*

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

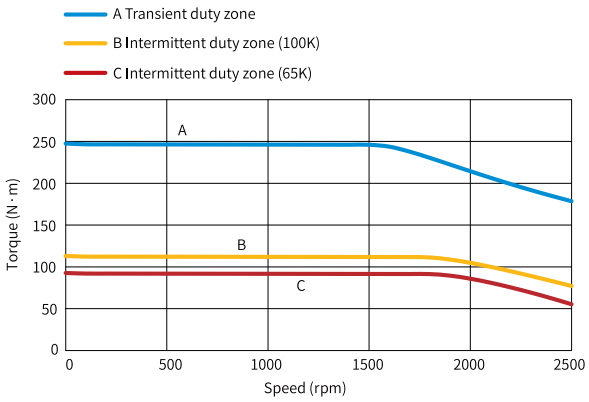
Product dimensions (mm)



4.8 ISMG1-17D15CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	14.5
Rated power (S4)	P_N	kW	17.3
Rated current (S1)	I_N	A	29.9
Rated current (S4)	I_N	A	35.7
Rated torque (S1)	T_N	N·m	92.0
Rated torque (S4)	T_N	N·m	110.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.08
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	248

Torque-Speed characteristics*

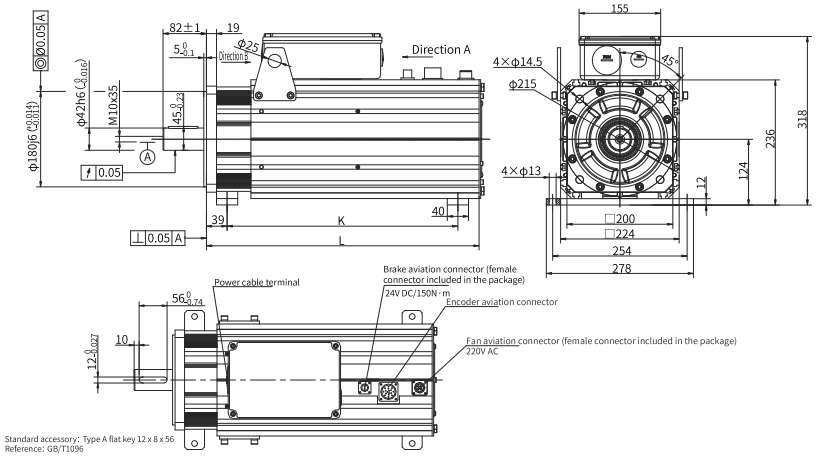


Motor specifications			
Item		Unit	Specification
Max. current	$I_{max.}$	A	86.5
Rotor moment of inertia	J_m	$kg \cdot cm^2$	105
Back EMF constant at 20°C	K_e	V/krpm	198
Rated point efficiency	n	%	92.5
D-axis inductance	L_d	mH	4.12
Q-axis inductance	L_q	mH	4.12
Phase resistance at 20°C	R_{phi}	mΩ	200.35
Net weight	-	kg	67

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

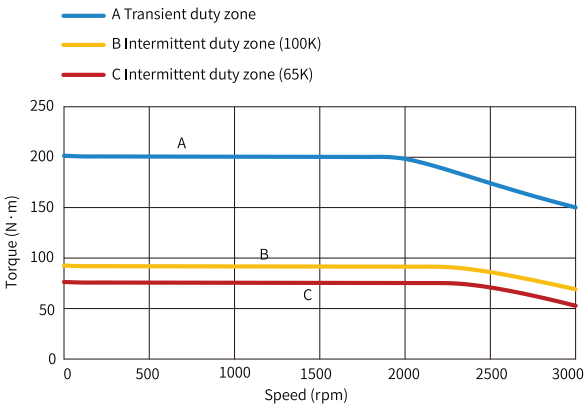


Motor model	L (mm)	K (mm)
ISMG1-17D15CD-A334FA	553	471

4.9 ISMG1-18D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	15.7
Rated power (S4)	P_N	kW	18.8
Rated current (S1)	I_N	A	28.6
Rated current (S4)	I_N	A	36.40
Rated torque (S1)	T_N	N·m	75.0
Rated torque (S4)	T_N	N·m	90.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.62
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	203
Max. current	$I_{max.}$	A	85.2
Rotor moment of inertia	J_m	kg·cm^2	90
Back EMF constant at 20°C	K_e	V/krpm	158.4
Rated point efficiency	n	%	92.9
D-axis inductance	L_d	mH	2.24
Q-axis inductance	L_q	mH	2.24
Phase resistance at 20°C	R_{phi}	mΩ	174.00
Net weight	-	kg	51.9

Torque-Speed characteristics*

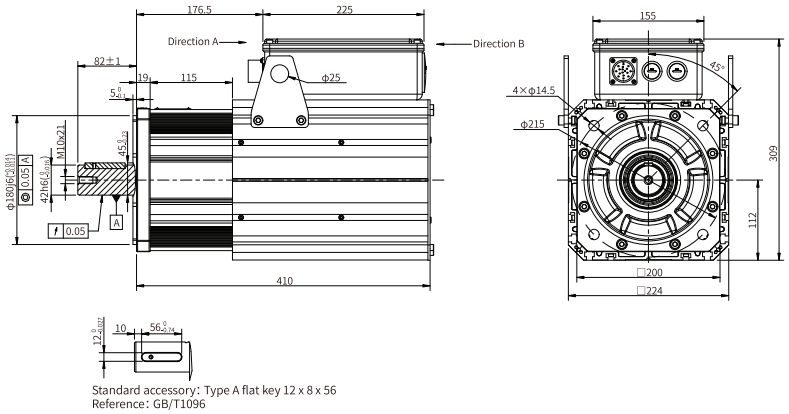


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

The 100 K and 65 K temperature rise indicates the average temperature rise of the winding.

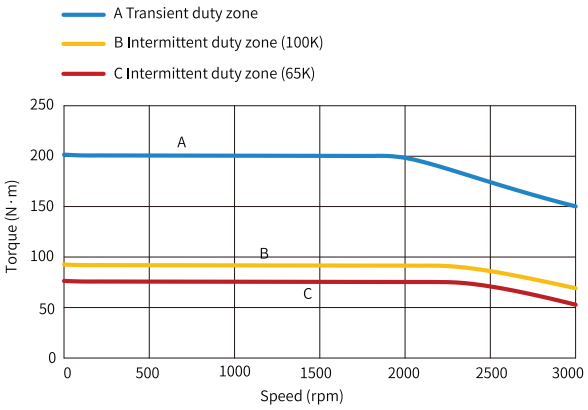
Product dimensions (mm)



4.10 ISMG1-18D20CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	15.7
Rated power (S4)	P_N	kW	18.8
Rated current (S1)	I_N	A	28.6
Rated current (S4)	I_N	A	36.40
Rated torque (S1)	T_N	N·m	75.0
Rated torque (S4)	T_N	N·m	90.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.62
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	203
Max. current	$I_{max.}$	A	85.2
Rotor moment of inertia	J_m	kg·cm^2	90
Back EMF constant at 20°C	K_e	V/krpm	158.4
Rated point efficiency	n	%	92.9
D-axis inductance	L_d	mH	2.24
Q-axis inductance	L_q	mH	2.24
Phase resistance at 20°C	R_{phi}	mΩ	174.00
Net weight	-	kg	59.9

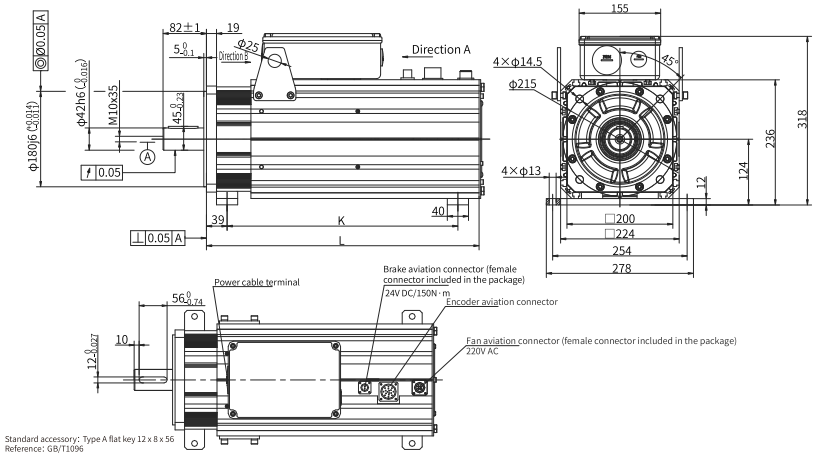
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

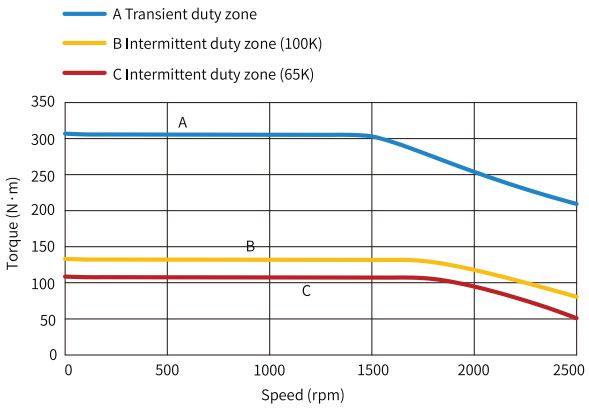


Motor model	L (mm)	K (mm)
ISMG1-18D20CD-A334FA	518	436

4.11 ISMG1-22D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	18.1
Rated power (S4)	P_N	kW	22.0
Rated current (S1)	I_N	A	35.5
Rated current (S4)	I_N	A	41.7
Rated torque (S1)	T_N	N·m	115.0
Rated torque (S4)	T_N	N·m	135.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.24
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	311
Max. current	$I_{max.}$	A	99.4
Rotor moment of inertia	J_m	kg·cm^2	120
Back EMF constant at 20°C	K_e	V/krpm	207.9
Rated point efficiency	n	%	93
D-axis inductance	L_d	mH	3.01
Q-axis inductance	L_q	mH	3.01
Phase resistance at 20°C	R_{phi}	mΩ	171.90
Net weight	-	kg	66

Torque-Speed characteristics*

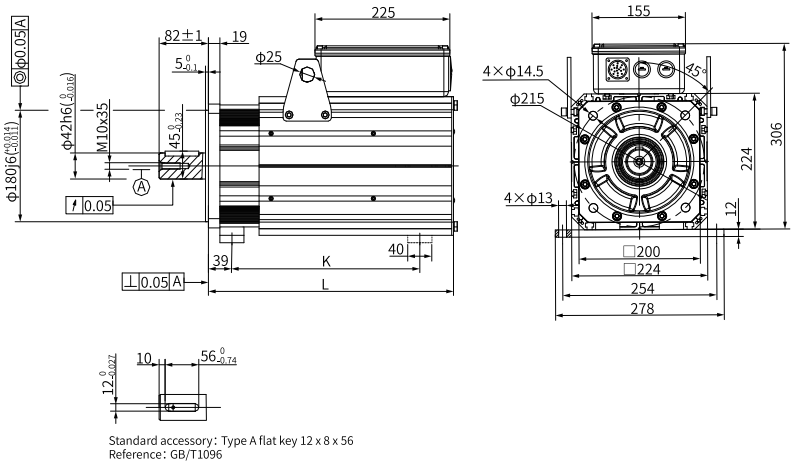


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

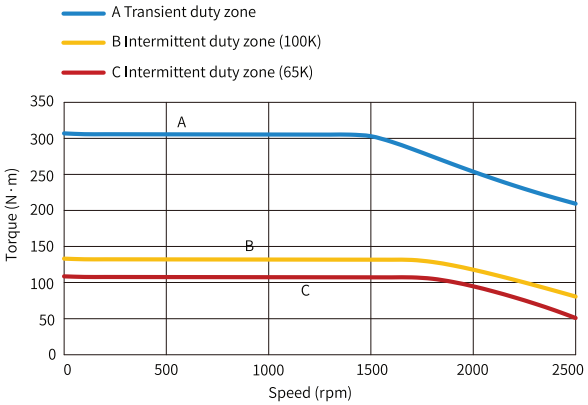


Motor model	L (mm)	K (mm)
ISMG1-22D15CD-A331FA	482	396

4.12 ISMG1-22D15CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	18.1
Rated power (S4)	P_N	kW	22.0
Rated current (S1)	I_N	A	35.5
Rated current (S4)	I_N	A	41.7
Rated torque (S1)	T_N	N·m	115.0
Rated torque (S4)	T_N	N·m	135.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.24
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	311
Max. current	$I_{max.}$	A	99.4
Rotor moment of inertia	J_m	kg·cm^2	120
Back EMF constant at 20°C	K_e	V/krpm	207.9
Rated point efficiency	n	%	93

Torque-Speed characteristics*

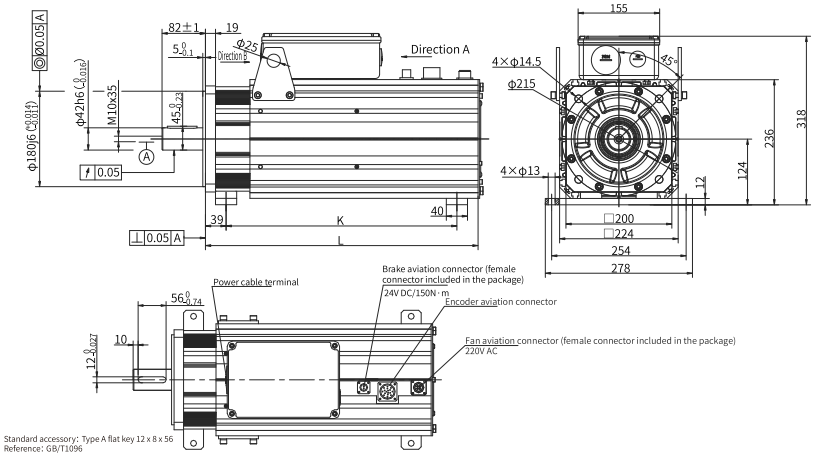


Motor specifications			
Item		Unit	Specification
D-axis inductance	L_d	mH	3.01
Q-axis inductance	L_q	mH	3.01
Phase resistance at 20℃	R_{phi}	mΩ	171.90
Net weight	-	kg	74

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

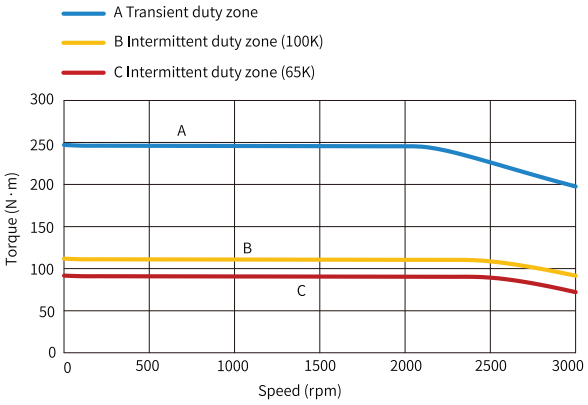


Motor model	L (mm)	K (mm)
ISMG1-22D15CD-A334FA	590	506

4.13 ISMG1-23D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	19.3
Rated power (S4)	P_N	kW	23.0
Rated current (S1)	I_N	A	37
Rated current (S4)	I_N	A	47.60
Rated torque (S1)	T_N	N·m	92.0
Rated torque (S4)	T_N	N·m	110.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.46
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	248
Max. current	$I_{max.}$	A	110.9
Rotor moment of inertia	J_m	kg·cm^2	105
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	93.3
D-axis inductance	L_d	mH	1.53
Q-axis inductance	L_q	mH	1.53
Phase resistance at 20°C	R_{phi}	mΩ	114.90
Net weight	-	kg	59

Torque-Speed characteristics*

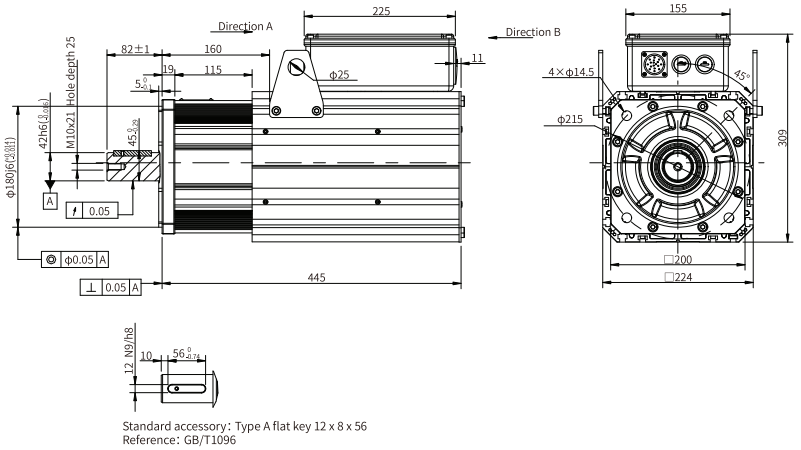


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

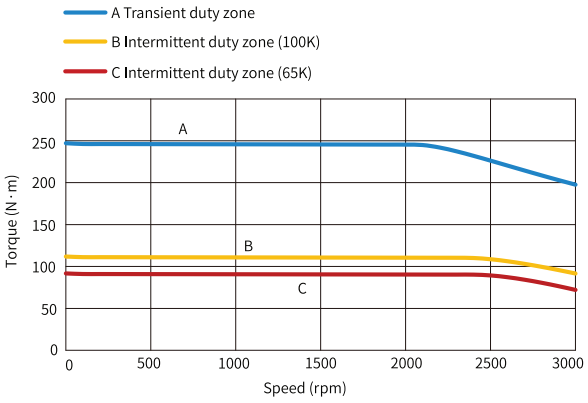
Product dimensions (mm)



4.14 ISMG1-23D20CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	19.3
Rated power (S4)	P_N	kW	23.0
Rated current (S1)	I_N	A	37
Rated current (S4)	I_N	A	47.60
Rated torque (S1)	T_N	N·m	92.0
Rated torque (S4)	T_N	N·m	110.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.46
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	248
Max. current	$I_{max.}$	A	110.9
Rotor moment of inertia	J_m	kg·cm^2	105
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	93.3
D-axis inductance	L_d	mH	1.53
Q-axis inductance	L_q	mH	1.53
Phase resistance at 20°C	R_{phi}	mΩ	114.90
Net weight	-	kg	69

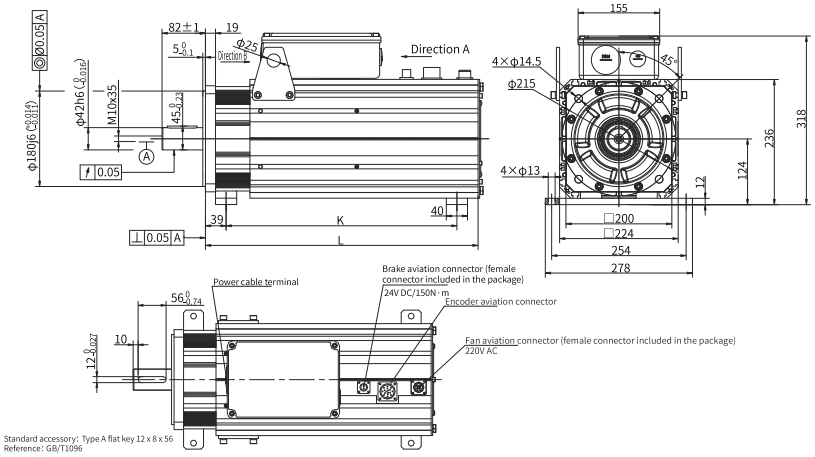
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

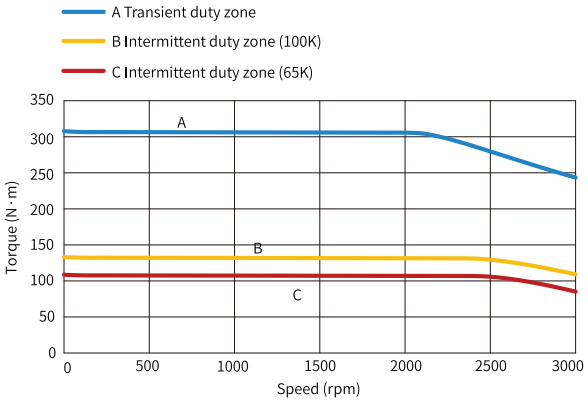


Motor model	L (mm)	K (mm)
ISMG1-23D20CD-A334FA	553	471

4.15 ISMG1-28D20CD-A331FA

Item		Unit	Specification
Motor specifications			
Rated power (S1)	P_N	kW	24.1
Rated power (S4)	P_N	kW	28.3
Rated current (S1)	I_N	A	49.8
Rated current (S4)	I_N	A	58.40
Rated torque (S1)	T_N	N·m	115.0
Rated torque (S4)	T_N	N·m	135.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.31
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	311
Max. current	$I_{max.}$	A	139.1
Rotor moment of inertia	J_m	kg·cm^2	120
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	93.6

Torque-Speed characteristics*



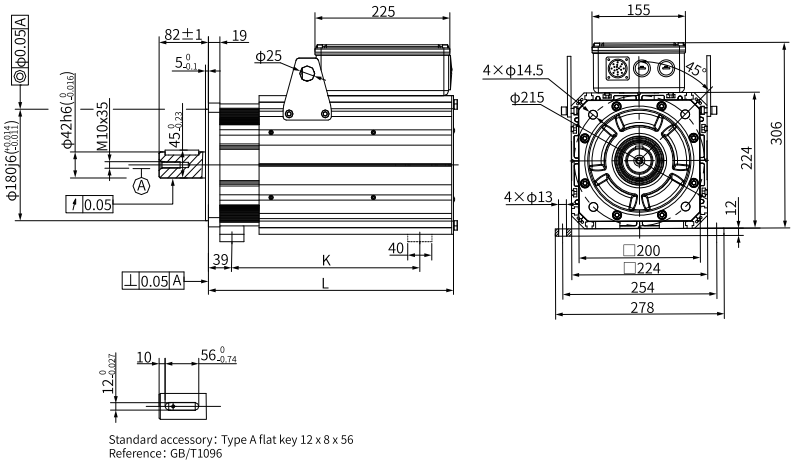
Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Item		Unit	Specification
D-axis inductance	L_d	mH	1.26
Q-axis inductance	L_q	mH	1.26
Phase resistance at 20℃	R_{phi}	mΩ	87.70
Net weight	-	kg	66

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

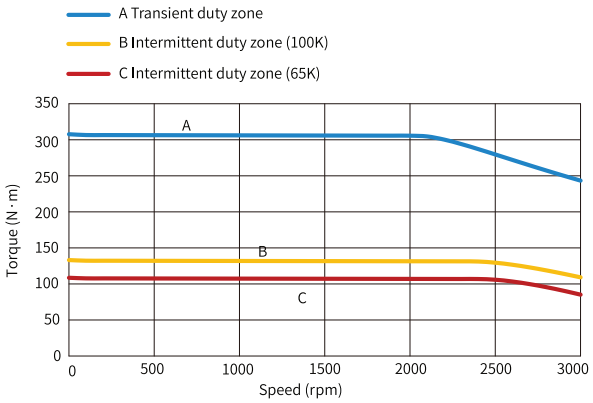


Motor model	L (mm)	K (mm)
ISMG1-28D20CD-A331FA	482	396

4.16 ISMG1-28D20CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	24.1
Rated power (S4)	P_N	kW	28.3
Rated current (S1)	I_N	A	49.8
Rated current (S4)	I_N	A	58.40
Rated torque (S1)	T_N	N·m	115.0
Rated torque (S4)	T_N	N·m	135.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.31
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	311
Max. current	$I_{max.}$	A	139.1
Rotor moment of inertia	J_m	kg·cm^2	120
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	93.6
D-axis inductance	L_d	mH	1.26
Q-axis inductance	L_q	mH	1.26
Phase resistance at 20°C	R_{phi}	mΩ	87.70
Net weight	-	kg	74

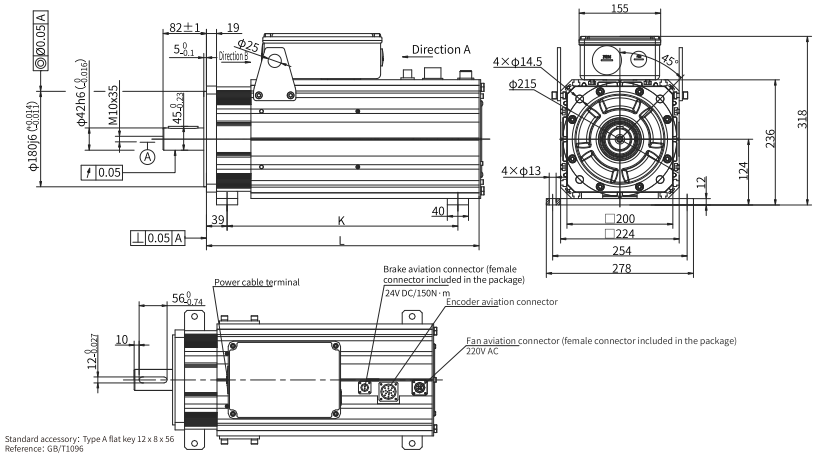
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

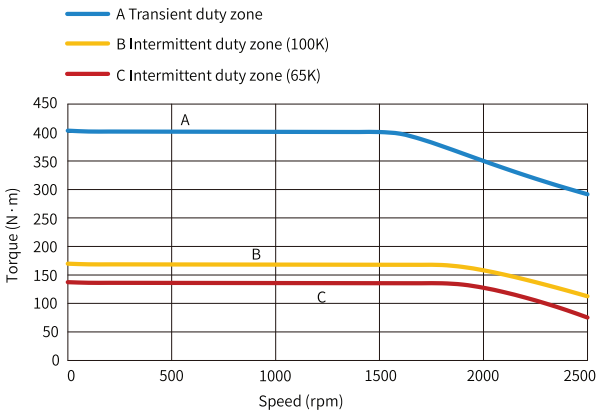


Motor model	L (mm)	K (mm)
ISMG1-28D20CD-A334FA	590	506

4.17 ISMG1-30D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	23.6
Rated power (S4)	P_N	kW	30.6
Rated current (S1)	I_N	A	48.7
Rated current (S4)	I_N	A	63.30
Rated torque (S1)	T_N	N·m	150.0
Rated torque (S4)	T_N	N·m	195.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20℃	K_T	N·m/A	3.08
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	405
Max. current	$I_{max.}$	A	138.5
Rotor moment of inertia	J_m	kg·cm^2	150
Back EMF constant at 20℃	K_e	V/krpm	198
Rated point efficiency	n	%	93.7
D-axis inductance	L_d	mH	2.64
Q-axis inductance	L_q	mH	2.64
Phase resistance at 20℃	R_{phi}	mΩ	108.10
Net weight	-	kg	79.8

Torque-Speed characteristics*

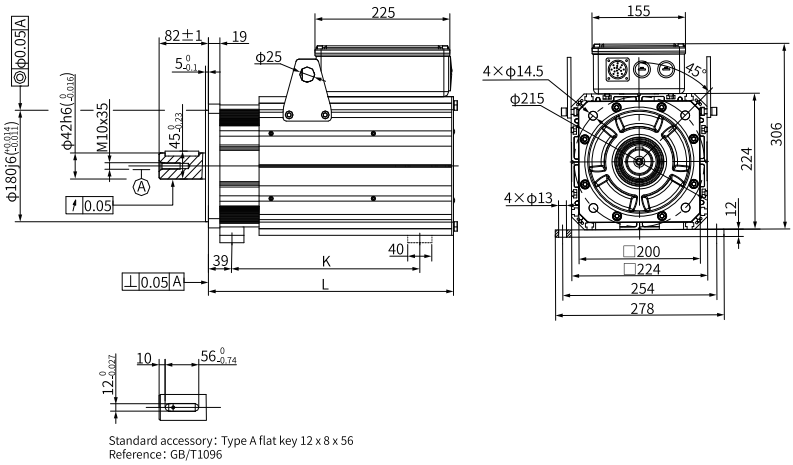


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

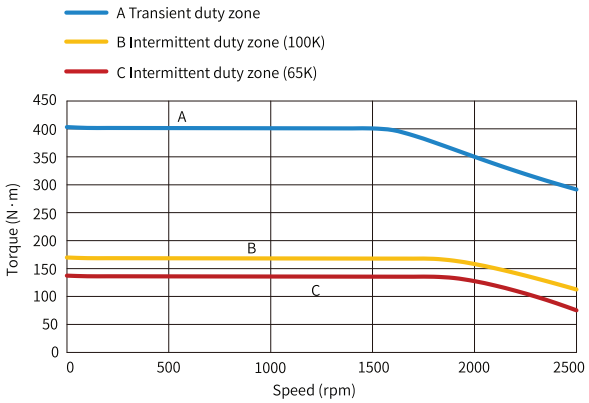


Motor model	L (mm)	K (mm)
ISMG1-30D15CD-A331FA	553	471

4.18 ISMG1-30D15CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	23.6
Rated power (S4)	P_N	kW	30.6
Rated current (S1)	I_N	A	48.7
Rated current (S4)	I_N	A	63.30
Rated torque (S1)	T_N	N·m	150.0
Rated torque (S4)	T_N	N·m	195.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.08
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	405
Max. current	$I_{max.}$	A	138.5
Rotor moment of inertia	J_m	kg·cm^2	150
Back EMF constant at 20°C	K_e	V/krpm	198
Rated point efficiency	n	%	93.7

Torque-Speed characteristics*

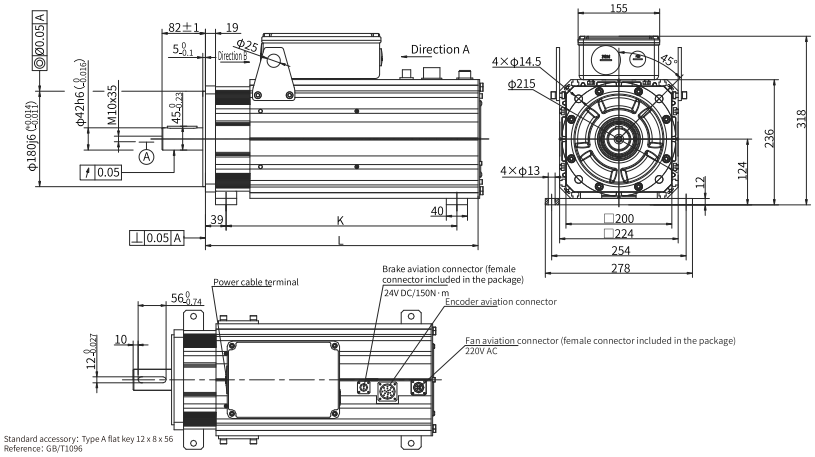


Motor specifications			
Item		Unit	Specification
D-axis inductance	L_d	mH	2.64
Q-axis inductance	L_q	mH	2.64
Phase resistance at 20℃	R_{phi}	mΩ	108.10
Net weight	-	kg	87.8

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

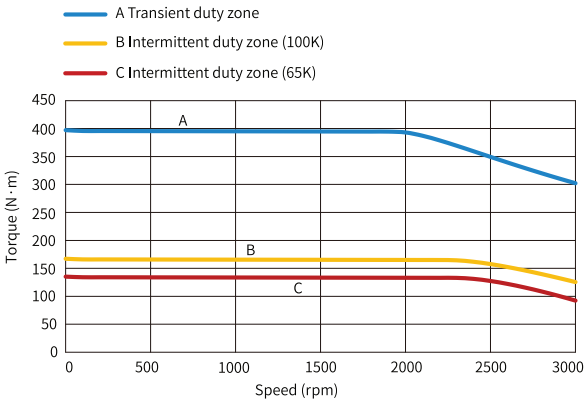


Motor model	L (mm)	K (mm)
ISMG1-30D15CD-A334FA	661	576

4.19 ISMG1-41D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	31.4
Rated power (S4)	P_N	kW	41.0
Rated current (S1)	I_N	A	57.3
Rated current (S4)	I_N	A	78.90
Rated torque (S1)	T_N	N·m	150.0
Rated torque (S4)	T_N	N·m	195.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.62
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	405
Max. current	$I_{max.}$	A	177.1
Rotor moment of inertia	J_m	kg·cm^2	150
Back EMF constant at 20°C	K_e	V/krpm	158.4
Rated point efficiency	n	%	93.9
D-axis inductance	L_d	mH	1.05
Q-axis inductance	L_q	mH	1.05
Phase resistance at 20°C	R_{phi}	mΩ	69.80
Net weight	-	kg	79.8

Torque-Speed characteristics*

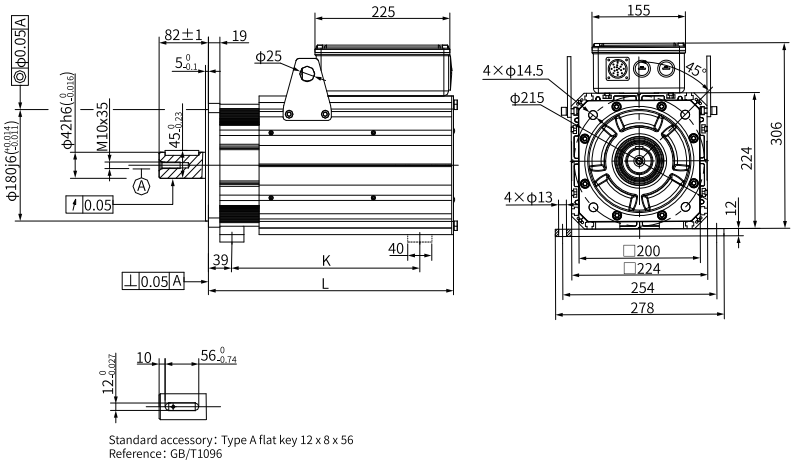


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

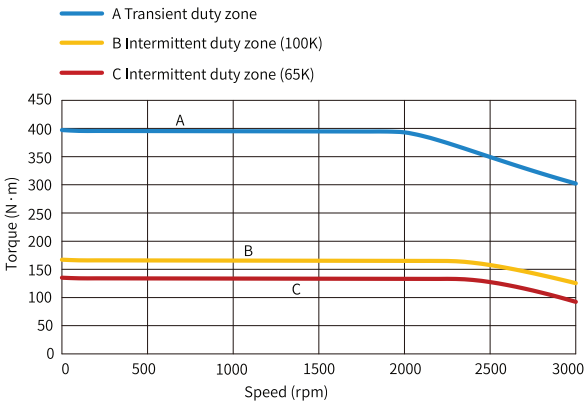


Motor model	L (mm)	K (mm)
ISMG1-41D20CD-A331FA	553	471

4.20 ISMG1-41D20CD-A334FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	31.4
Rated power (S4)	P_N	kW	41.0
Rated current (S1)	I_N	A	57.3
Rated current (S4)	I_N	A	78.90
Rated torque (S1)	T_N	N·m	150.0
Rated torque (S4)	T_N	N·m	195.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.62
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	405
Max. current	$I_{max.}$	A	177.1
Rotor moment of inertia	J_m	kg·cm^2	150
Back EMF constant at 20°C	K_e	V/krpm	158.4
Rated point efficiency	n	%	93.9
D-axis inductance	L_d	mH	1.05
Q-axis inductance	L_q	mH	1.05
Phase resistance at 20°C	R_{phi}	mΩ	69.80
Net weight	-	kg	87.8

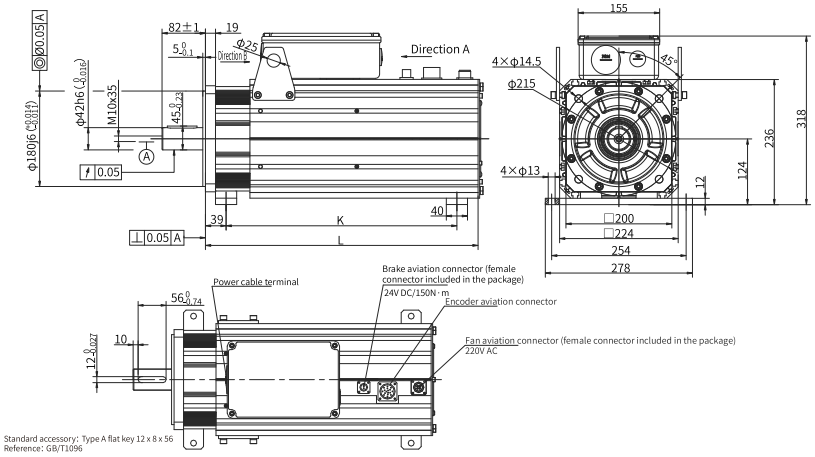
Torque-Speed characteristics*



Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

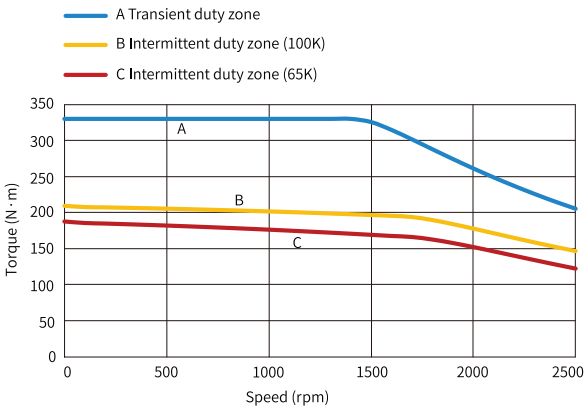


Motor model	L (mm)	K (mm)
ISMG1-41D20CD-A334FA	661	576

4.21 ISMG2-31D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	27
Rated power (S4)	P_N	kW	31.4
Rated current (S1)	I_N	A	49.4
Rated current (S4)	I_N	A	61.70
Rated torque (S1)	T_N	N·m	180.0
Rated torque (S4)	T_N	N·m	200.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.44
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	366
Max. current	$I_{max.}$	A	117
Rotor moment of inertia	J_m	kg·cm^2	296
Back EMF constant at 20°C	K_e	V/krpm	207.93
Rated point efficiency	n	%	93.7

Torque-Speed characteristics



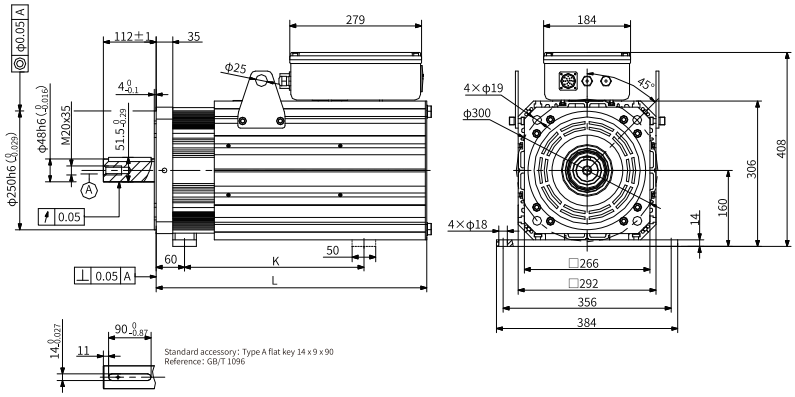
Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Motor specifications			
Item		Unit	Specification
D-axis inductance	L_d	mH	2.22
Q-axis inductance	L_q	mH	2.22
Phase resistance at 20°C	R_{phi}	mΩ	70.70
Net weight	-	kg	122

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

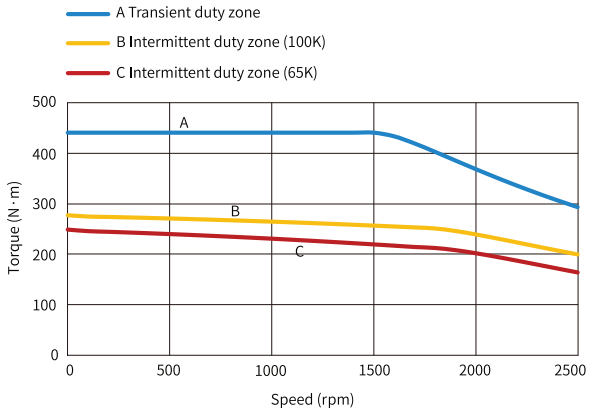


Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-31D15CD-A331FA	525	360	122

4.22 ISMG2-42D15CD-A331FA

Item		Unit	Specification
Motor specifications			
Rated power (S1)	P_N	kW	36.1
Rated power (S4)	P_N	kW	42.4
Rated current (S1)	I_N	A	74
Rated current (S4)	I_N	A	87.70
Rated torque (S1)	T_N	N·m	230.0
Rated torque (S4)	T_N	N·m	270.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.08
Max. speed (flux weakening ON)	n_{max}	rpm	2500

Torque-Speed characteristics*



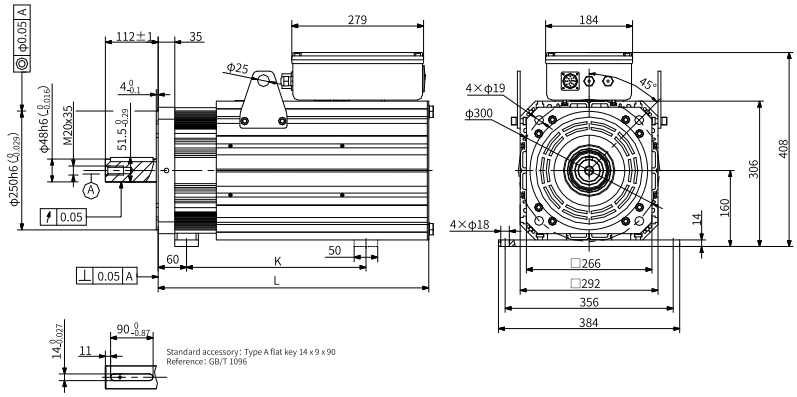
Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	440
Max. current	$I_{max.}$	A	166.5
Rotor moment of inertia	J_m	$kg \cdot cm^2$	368
Back EMF constant at 20℃	K_e	V/krpm	198
Rated point efficiency	n	%	94.10
D-axis inductance	L_d	mH	1.53
Q-axis inductance	L_q	mH	1.53
Phase resistance at 20℃	R_{phi}	mΩ	42.45
Net weight	-	kg	141.3

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

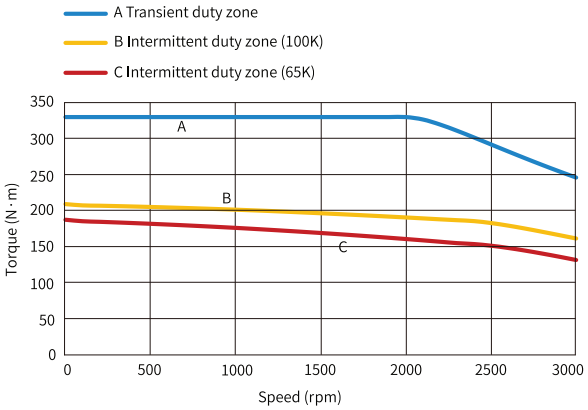


Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-42D15CD-A331FA	577	370	141.3

4.23 ISMG2-42D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	35.6
Rated power (S4)	P_N	kW	41.9
Rated current (S1)	I_N	A	69.1
Rated current (S4)	I_N	A	86.60
Rated torque (S1)	T_N	N·m	170.0
Rated torque (S4)	T_N	N·m	200.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.46
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	330
Max. current	$I_{max.}$	A	163.7
Rotor moment of inertia	J_m	$kg \cdot cm^2$	296
Back EMF constant at 20°C	K_e	V/krpm	148.5
Rated point efficiency	n	%	94.3
D-axis inductance	L_d	mH	1.13
Q-axis inductance	L_q	mH	1.13
Phase resistance at 20°C	R_{phi}	mΩ	36.20
Net weight	-	kg	122

Torque-Speed characteristics*

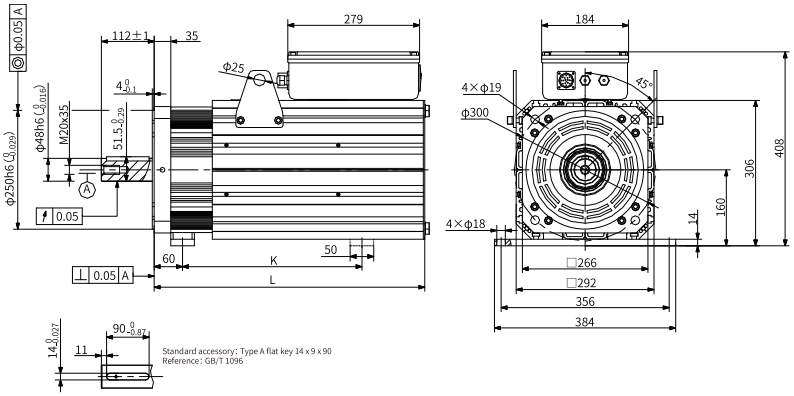


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

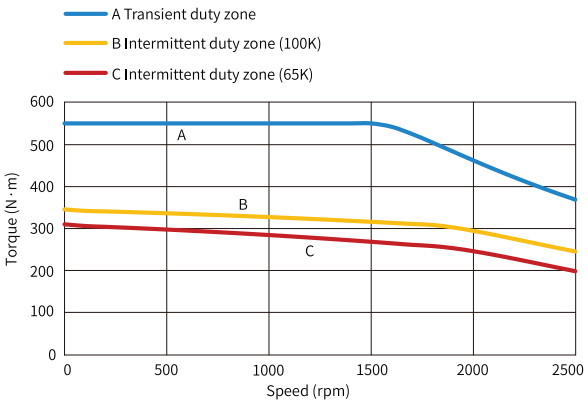


Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-42D20CD-A331FA	525	360	122

4.24 ISMG2-52D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	44.8
Rated power (S4)	P_N	kW	52.6
Rated current (S1)	I_N	A	87.2
Rated current (S4)	I_N	A	104.40
Rated torque (S1)	T_N	N·m	285.0
Rated torque (S4)	T_N	N·m	335.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.27
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	550
Max. current	$I_{max.}$	A	206.2
Rotor moment of inertia	J_m	kg·cm^2	434
Back EMF constant at 20°C	K_e	V/krpm	198
Rated point efficiency	n	%	94.8
D-axis inductance	L_d	mH	1.14
Q-axis inductance	L_q	mH	1.14
Phase resistance at 20°C	R_{phi}	mΩ	30.90
Net weight	-	kg	158.4

Torque-Speed characteristics*

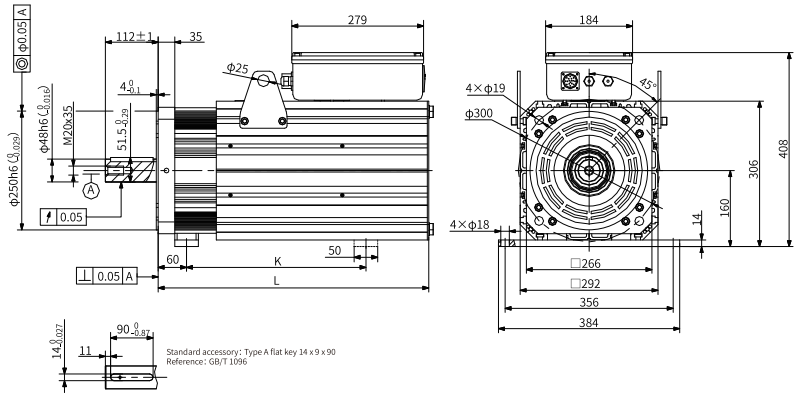


Connector model	
Connector type	Encoder sSide
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

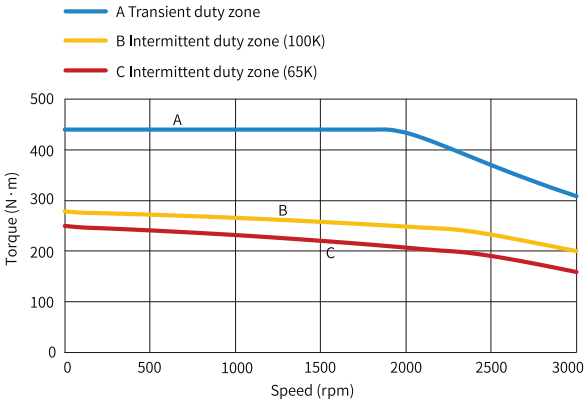


Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-52D15CD-A331FA	629	476	158.4

4.25 ISMG2-57D20CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	48.2
Rated power (S4)	P_N	kW	56.5
Rated current (S1)	I_N	A	93.1
Rated current (S4)	I_N	A	109.30
Rated torque (S1)	T_N	N·m	230.0
Rated torque (S4)	T_N	N·m	270.0
Rated speed	n_N	rpm	2000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	133.33
Torque constant at 20°C	K_T	N·m/A	2.47
Max. speed (flux weakening ON)	n_{max}	rpm	3000
Max. speed (flux weakening OFF)	n_{max}	rpm	2200
Max. torque	T_{max}	N·m	440
Max. current	$I_{max.}$	A	207.8
Rotor moment of inertia	J_m	kg·cm^2	368
Back EMF constant at 20°C	K_e	V/krpm	158.4
Rated point efficiency	n	%	96.4
D-axis inductance	L_d	mH	0.93
Q-axis inductance	L_q	mH	0.93
Phase resistance at 20°C	R_{phi}	mΩ	26.90
Net weight	-	kg	141.3

Torque-Speed characteristics*

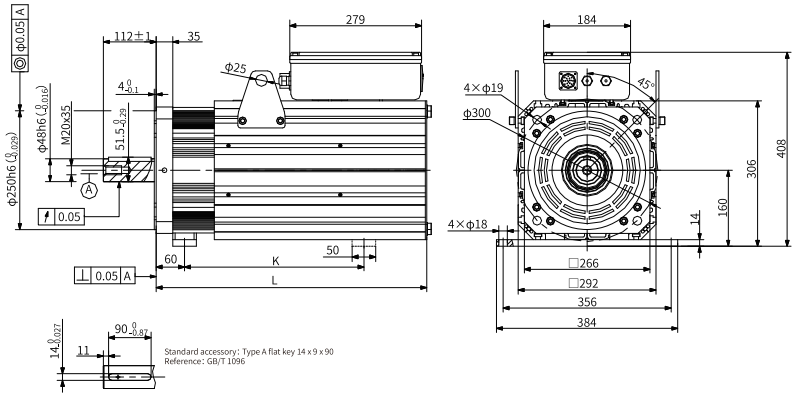


Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

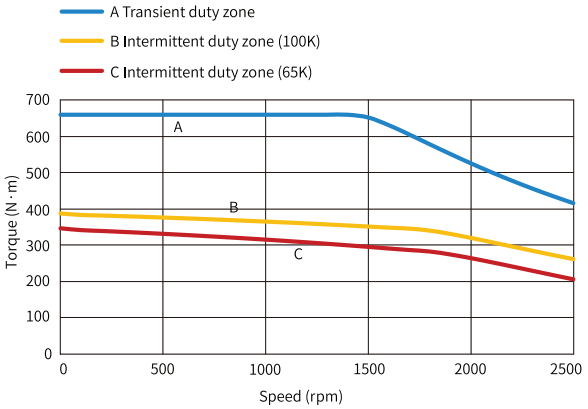


Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-57D15CD-A331FA	577	370	141.3

4.26 ISMG2-60D15CD-A331FA

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	53.4
Rated power (S4)	P_N	kW	60.5
Rated current (S1)	I_N	A	98.8
Rated current (S4)	I_N	A	118.80
Rated torque (S1)	T_N	N·m	340.0
Rated torque (S4)	T_N	N·m	385.0
Rated speed	n_N	rpm	1500
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	100
Torque constant at 20°C	K_T	N·m/A	3.44
Max. speed (flux weakening ON)	n_{max}	rpm	2500
Max. speed (flux weakening OFF)	n_{max}	rpm	1800
Max. torque	T_{max}	N·m	731
Max. current	$I_{max.}$	A	233.8
Rotor moment of inertia	J_m	kg·cm^2	500
Back EMF constant at 20°C	K_e	V/krpm	207.9
Rated point efficiency	n	%	94.8
D-axis inductance	L_d	mH	1.03

Torque-Speed characteristics*



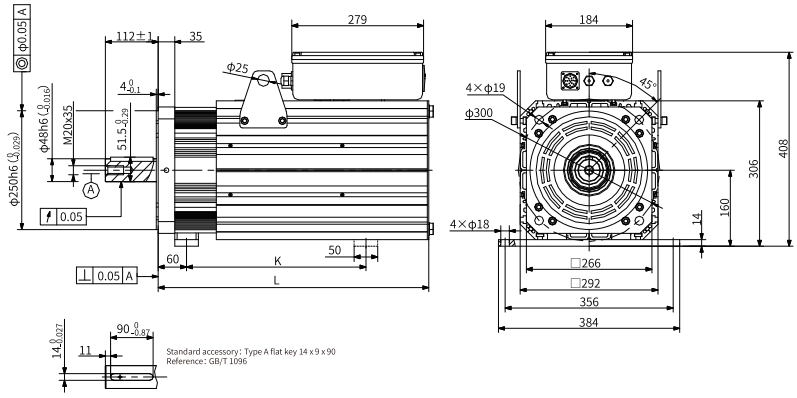
Connector model	
Connector type	Encoder side
Aviation connector	MIL-DTL-5015 series 3102E20-29P

Motor specifications			
Item		Unit	Specification
Q-axis inductance	L_q	mH	1.03
Phase resistance at 20℃	R_{phi}	mΩ	30.40
Net weight	-	kg	175.4

Note

*The 100 K and 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)



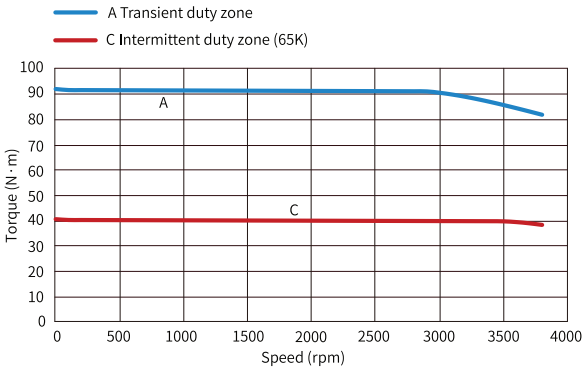
Motor model	L (mm)	K (mm)	Weight (kg)
ISMG2-60D15CD-A331FA	680	476	175.4

5 ISMG Air-cooled High Inertia Series

5.1 ISMG1-12D30CD-A331FA-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	11.8
Rated power (S4)	P_N	kW	13.8
Rated current (S1)	I_N	A	24.3
Rated current (S4)	I_N	A	30.86
Rated torque (S1)	T_N	N·m	37.5
Rated torque (S4)	T_N	N·m	43.9
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.54
Max. speed (flux weakening ON)	n_{max}	rpm	3800
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	90
Max. current	$I_{max.}$	A	60.4
Rotor moment of inertia	J_m	kg·cm^2	173
Back EMF constant at 20°C	K_e	V/krpm	99
Rated point efficiency	n	%	90.6
D-axis inductance	L_d	mH	1.90
Q-axis inductance	L_q	mH	1.90
Phase resistance at 20°C	R_{phi}	mΩ	197.20
Net weight	-	kg	45.2

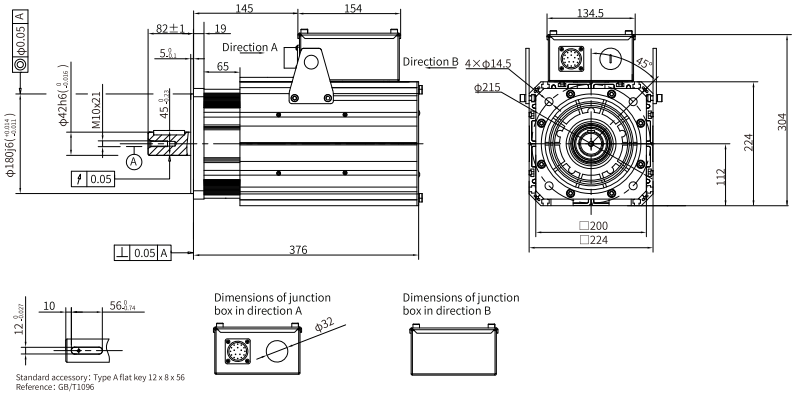
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

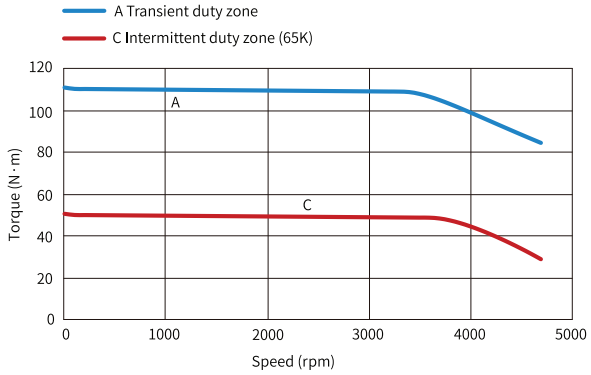
Product dimensions (mm)



5.2 ISMG1-17D33CD-A311FA-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	17.2
Rated power (S4)	P_N	kW	20.2
Rated current (S1)	I_N	A	30
Rated current (S4)	I_N	A	38.10
Rated torque (S1)	T_N	N·m	50.0
Rated torque (S4)	T_N	N·m	58.5
Rated speed	n_N	rpm	3300
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	220.00
Torque constant at 20°C	K_T	N·m/A	1.67
Max. speed (flux weakening ON)	n_{max}	rpm	4700
Max. speed (flux weakening OFF)	n_{max}	rpm	3500
Max. torque	T_{max}	N·m	110
Max. current	$I_{max.}$	A	66
Rotor moment of inertia	J_m	kg·cm^2	345
Back EMF constant at 20°C	K_e	V/krpm	101
Rated point efficiency	n	%	92.5
D-axis inductance	L_d	mH	1.26
Q-axis inductance	L_q	mH	2.52
Phase resistance at 20°C	R_{phi}	mΩ	67.35
Net weight	-	kg	79.8

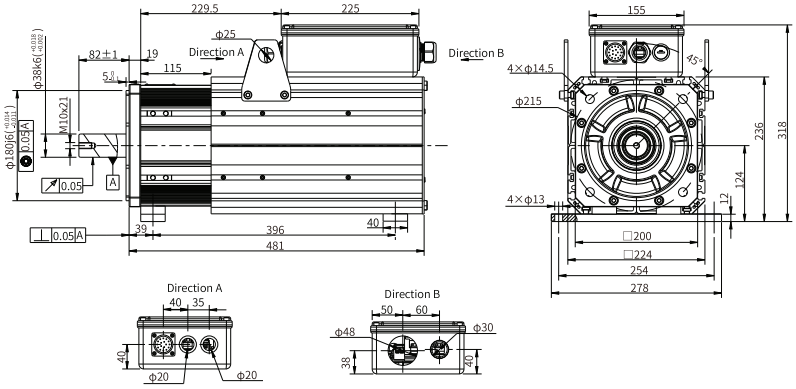
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

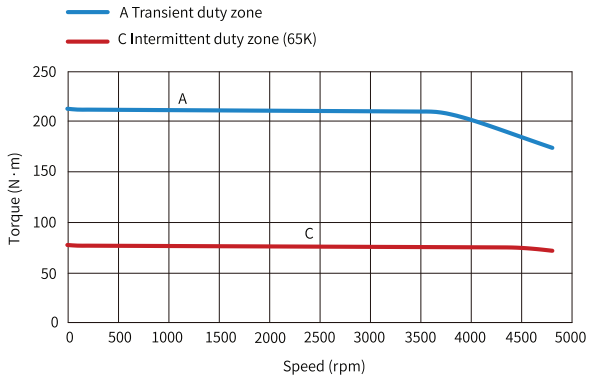
Product dimensions (mm)



5.3 ISMG1-29D30CD-A3A1FA-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	23.6
Rated power (S4)	P_N	kW	27.6
Rated current (S1)	I_N	A	57.3
Rated current (S4)	I_N	A	72.77
Rated torque (S1)	T_N	N·m	75.0
Rated torque (S4)	T_N	N·m	87.8
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.31
Max. speed (flux weakening ON)	n_{max}	rpm	4800
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	203
Max. current	$I_{max.}$	A	170.5
Rotor moment of inertia	J_m	kg·cm^2	345
Back EMF constant at 20°C	K_e	V/krpm	79.2
Rated point efficiency	n	%	92.5
D-axis inductance	L_d	mH	0.75
Q-axis inductance	L_q	mH	1.46
Phase resistance at 20°C	R_{phi}	mΩ	43.50
Net weight	-	kg	79.8

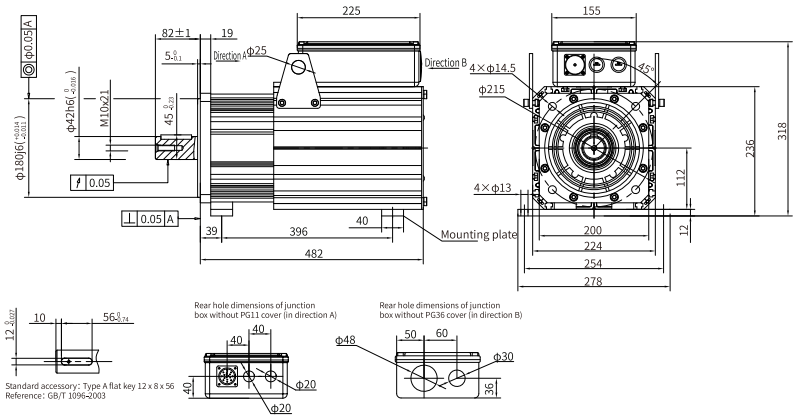
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

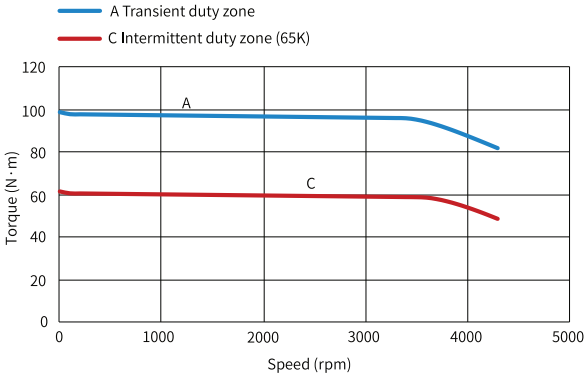
Product dimensions (mm)



5.4 ISMG2-18D30CD-A3A1FA-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	18.8
Rated power (S4)	P_N	kW	22.1
Rated current (S1)	I_N	A	36.2
Rated current (S4)	I_N	A	45.97
Rated torque (S1)	T_N	N·m	60.0
Rated torque (S4)	T_N	N·m	70.2
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.66
Max. speed (flux weakening ON)	n_{max}	rpm	4300
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	96
Max. current	$I_{max.}$	A	58
Rotor moment of inertia	J_m	kg·cm^2	910
Back EMF constant at 20°C	K_e	V/krpm	91.5
Rated point efficiency	n	%	93.9
D-axis inductance	L_d	mH	1.17
Q-axis inductance	L_q	mH	2.01
Phase resistance at 20°C	R_{phi}	mΩ	30.05
Net weight	-	kg	122.0

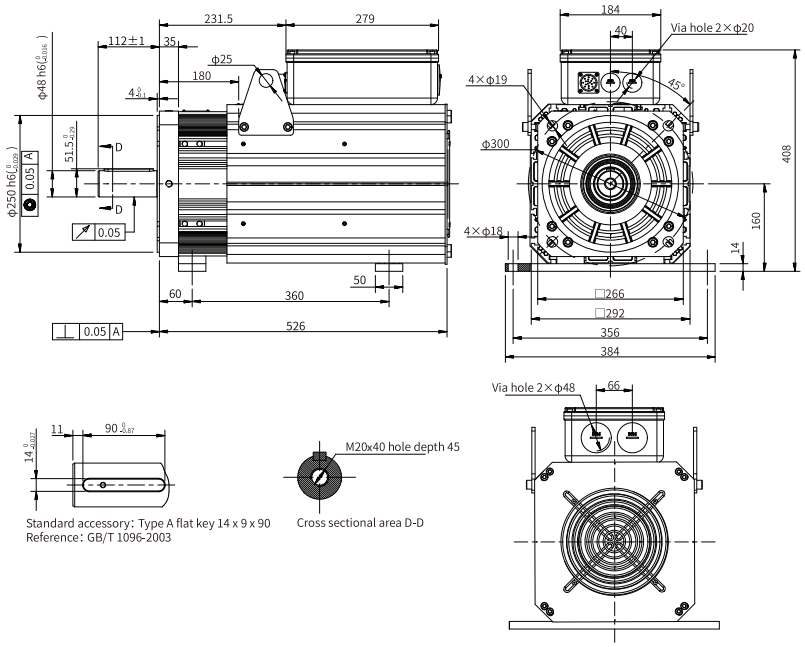
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)

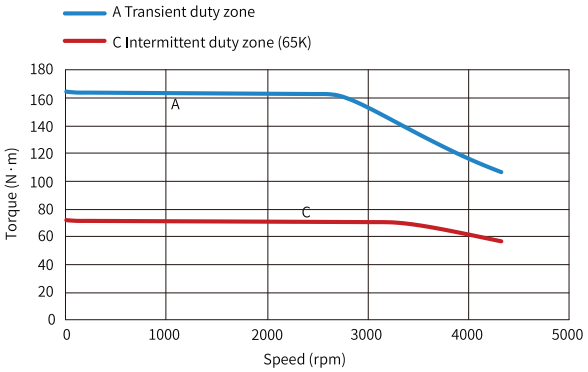


6 ISMG Water-cooled High Inertia Series

6.1 ISMG1-22D30CD-A3A1L-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	22
Rated power (S4)	P_N	kW	25.7
Rated current (S1)	I_N	A	40.7
Rated current (S4)	I_N	A	51.69
Rated torque (S1)	T_N	N·m	70.0
Rated torque (S4)	T_N	N·m	81.9
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.72
Max. speed (flux weakening ON)	n_{max}	rpm	4330
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	161
Max. current	$I_{max.}$	A	103
Rotor moment of inertia	J_m	kg·cm^2	198
Back EMF constant at 20°C	K_e	V/krpm	103.96
Rated point efficiency	n	%	92.5
D-axis inductance	L_d	mH	1.34
Q-axis inductance	L_q	mH	2.10
Phase resistance at 20°C	R_{phi}	mΩ	112.00
Net weight	-	kg	51.9

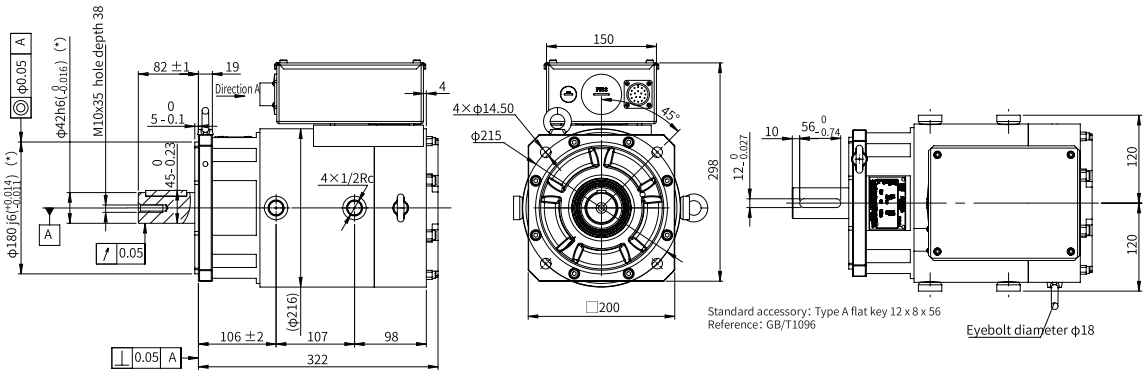
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

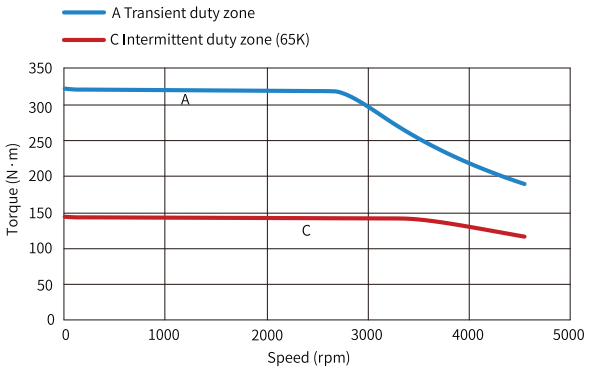
Product dimensions (mm)



6.2 ISMG1-45D30CD-A3A1L-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	45.0
Rated power (S4)	P_N	kW	52.7
Rated current (S1)	I_N	A	87.4
Rated current (S4)	I_N	A	111.00
Rated torque (S1)	T_N	N·m	143.4
Rated torque (S4)	T_N	N·m	167.8
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.67
Max. speed (flux weakening ON)	n_{max}	rpm	4550
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	330
Max. current	$I_{max.}$	A	221.3
Rotor moment of inertia	J_m	kg·cm^2	228
Back EMF constant at 20°C	K_e	V/krpm	99
Rated point efficiency	n	%	94
D-axis inductance	L_d	mH	0.68
Q-axis inductance	L_q	mH	1.02
Phase resistance at 20°C	R_{phi}	mΩ	50.10
Net weight	-	kg	66.0

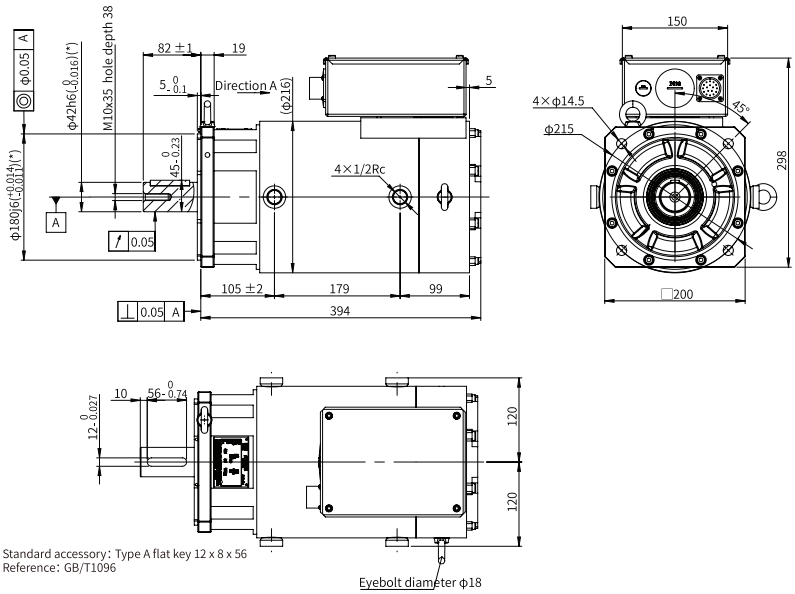
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

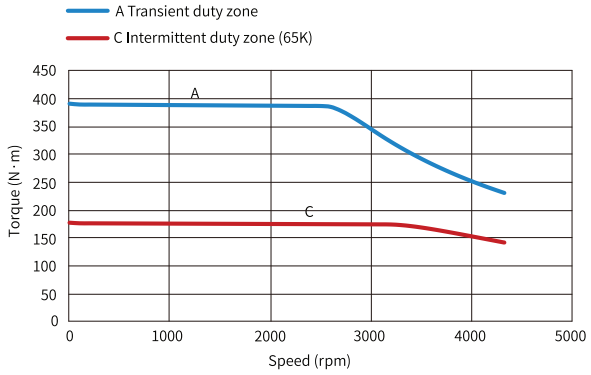
Product dimensions (mm)



6.3 ISMG1-55D30CD-A3A1L-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	55
Rated power (S4)	P_N	kW	64.3
Rated current (S1)	I_N	A	101.7
Rated current (S4)	I_N	A	129.16
Rated torque (S1)	T_N	N·m	175.0
Rated torque (S4)	T_N	N·m	204.8
Rated speed	n_N	rpm	3000
Rated voltage	U_N	V	380
Rated frequency	f_N	Hz	200.00
Torque constant at 20°C	K_T	N·m/A	1.72
Max. speed (flux weakening ON)	n_{max}	rpm	4330
Max. speed (flux weakening OFF)	n_{max}	rpm	3200
Max. torque	T_{max}	N·m	403
Max. current	$I_{max.}$	A	257.7
Rotor moment of inertia	J_m	kg·cm^2	360
Back EMF constant at 20°C	K_e	V/krpm	103.97
Rated point efficiency	n	%	94.4
D-axis inductance	L_d	mH	0.62
Q-axis inductance	L_q	mH	0.90
Phase resistance at 20°C	R_{phi}	mΩ	43.00
Net weight	-	kg	79.8

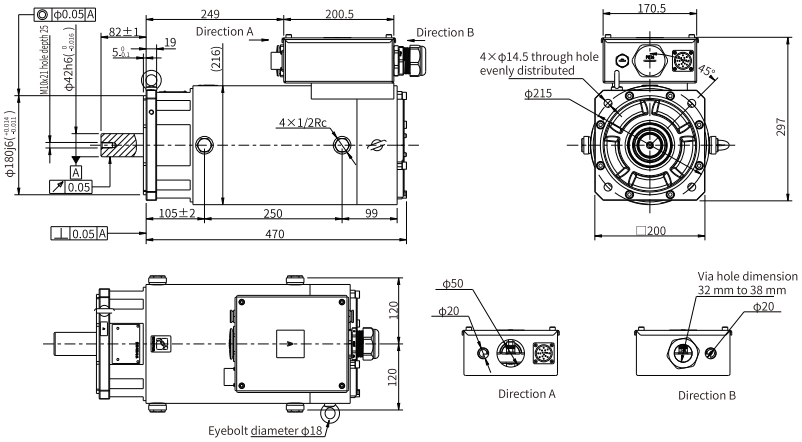
Torque-Speed characteristics*



Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

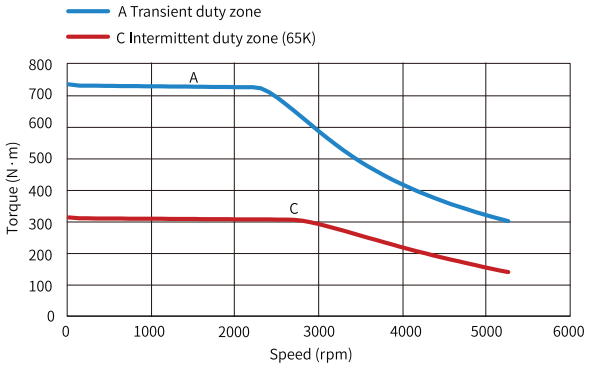
Product dimensions (mm)



6.4 ISMG2-92D38CD-A3B1L-GL

Motor specifications			
Item		Unit	Specification
Rated power (S1)	P_N	kW	92.7
Rated power (S4)	P_N	kW	108.5
Rated current (S1)	I_N	A	122
Rated current (S4)	I_N	A	154.94
Rated torque (S1)	T_N	N·m	233.0
Rated torque (S4)	T_N	N·m	272.6
Rated speed	n_N	rpm	3800
Rated voltage	U_N	V	446
Rated frequency	f_N	Hz	253.33
Torque constant at 20°C	K_T	N·m/A	1.91
Max. speed (flux weakening ON)	n_{max}	rpm	5300
Max. speed (flux weakening OFF)	n_{max}	rpm	4300
Max. torque	T_{max}	N·m	730
Max. current	$I_{max.}$	A	320
Rotor moment of inertia	J_m	kg·cm^2	1500
Back EMF constant at 20°C	K_e	V/krpm	145.2
Rated point efficiency	n	%	96.4
D-axis inductance	L_d	mH	0.88

Torque-Speed characteristics*

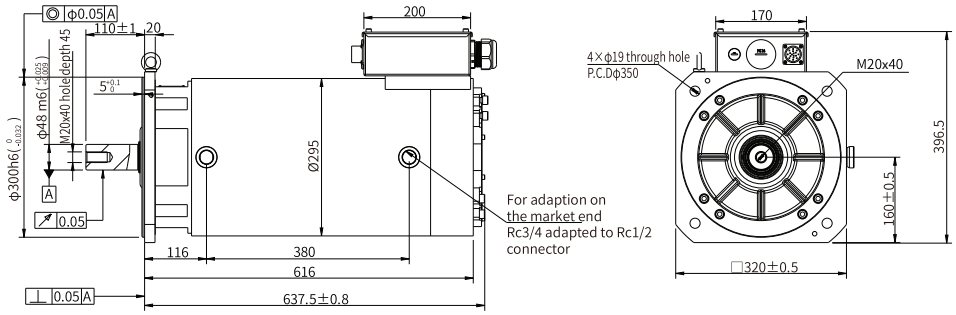


Motor specifications			
Item		Unit	Specification
Q-axis inductance	L_q	mH	1.68
Phase resistance at 20℃	R_{phi}	mΩ	14.40
Net weight	-	kg	229.5

Note

*The 65 K temperature rise in the torque-speed characteristic diagram indicates the average temperature rise of the winding.

Product dimensions (mm)



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