

Autonics

5-Phase Electromagnetic brake type Stepping Motor

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow;

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.

Caution: Injury or danger may occur under special conditions.

Warning

1. In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required.
It may cause serious human injury or a fire, property.

2. Do not use this unit at place where there are flammable or explosive gas, corrosion and water exist.
It may cause a fire or burn.

3. Installation, connection, operation, control, maintenance should be carried out by person who has been qualified.
It may cause a fire or human injury, give electronic shock.

4. Please install it in power off.

It may give electronic shock.

5. Please earth or install it with housing so that protecting a touch of human body.
It may give electronic shock or human injury.

6. Do not disassemble or modify this unit.

It may cause damage to this product or quality down.

Caution

1. Please keep the specification of this unit.

It may cause damage to this product.

2. Do not put obstacle object for well ventilation around this unit.

It may cause a damage to this product or malfunction of peripheral equipment by motor heating.

3. Please fix this unit on a metal plate tightly.

It may cause human injury or damage of this product and peripheral device.

4. Please stop this unit when mechanical trouble occurred.

It may cause a fire or human injury.

5. The surface temperature of the motor can be over 70°C in normal operating state. Please put a caution mark on outstanding place when somebody may approach to the operating motor.

It may cause a burn.

6. Do not carry the cable or rotating part of this unit.

It may cause human injury.

7. Please put a cover on the rotating part of this unit.

It may cause human injury.

8. Please separate as industrial scrapped material when disuse this unit.

※The above specification on this manual is changeable without notice anytime.

Ordering information

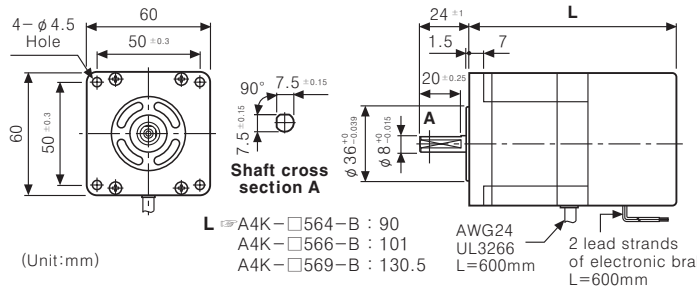
A	□	K	-	□	5	□	□	-	B
Motor type									
Motor length(mm)									
Motor frame size(mm×mm)									
Motor phase									
Rated current[A]/Phase									
Max. allowable torque(kgf·cm)									
Series									

B	Electromagnetic Brake type
4	48.5
6	59.5
9	89
6	60 angle
5	5 phase
S	0.75
M	1.4
G	2.8
4	4.2
8	8.3
16	16.6

Specifications

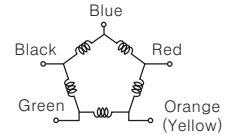
Model	A4K-S564-B	A4K-M564-B	A8K-S566-B	A8K-M566-B	A16K-M569-B	A16K-G569-B
Holding torque	4.2[kgf·cm] 0.42 [N·m]		8.3[kgf·cm] 0.83 [N·m]		16.6[kgf·cm] 1.66 [N·m]	
Rotor inertia moment	175[g·cm ²] 175×10 ⁻⁷ [kg·m ²]		280[g·cm ²] 280×10 ⁻⁷ [kg·m ²]		560[g·cm ²] 560×10 ⁻⁷ [kg·m ²]	
Rated current	0.75[A]/Phase	1.4[A]/Phase	0.75[A]/Phase	1.4[A]/Phase	1.4[A]/Phase	2.8[A]/Phase
Basic step angle	0.72°/0.36° (Full/Half)					
Electro-Magnetic Brake	Rated excitation voltage : 24VDC					
	Rated excitation current : 0.33A					
	Rated brake power : 4[kgf·cm]					
	Rotation part inertia : 2.5×10 ⁻⁴ [kg·m ²]					
Insulation class	CLASS B(130°C)					
Insulation resistance	Min. 100MΩ (at 500VDC) between motor coil and case					
Dielectric strength	1.0kVAC 50/60Hz for 1min. between motor coil and case					
Operation condition	Ambient temperature	-10°C ~ +50°C (at non-freezing status)				
	Altitude	Max. 1,000m above the sea level				
	Humidity	35 ~ 85%RH				
Transportation condition	Ambient temperature	-25°C ~ +70°C				
	Altitude	Max. 3,000m above the sea level				
	Humidity	35 ~ 85%RH				
Storage condition	Ambient temperature	-25°C ~ +70°C				
	Altitude	Max. 3,000m above the sea level				
	Humidity	35 ~ 85%RH				
Standard	IEC34-5					
Protection	IP30					
Weight	Approx. 0.9kg		Approx. 1.1kg		Approx. 1.6kg	

Dimensions



Connection diagram

Five lead wires come out as wiring each phase coil by pentagon connection in Electromagnetic Brake type stepping motor.



Motor mounting

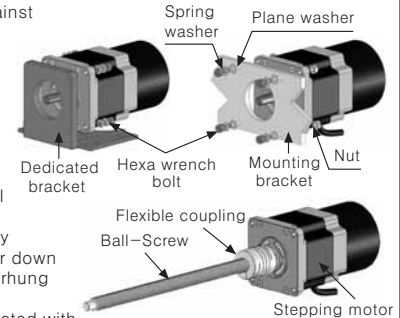
●Please mount the motor tightly against a metal surface with good thermal conductivity such as steel or aluminum.

●Please use it by fixing hexagonal socket screw, hexagonal nut, spring washer, plane washer, Nut on motor tightly when installing motor. Please use bolt "M5 size" for thicker than 5[mm] of the metal mounting plate.

●Motor can be mounted freely in any direction of side ways, facing up or down as following. But please check overhanging and thrust load on shaft.

●When using the motor shaft connected with a load, ball-screw, etc. directly, please use flexible coupling. Unless the centers of motor shaft and load part are coincided, vibration will be occurred. And it will cause the reduction of life cycle and the unexpected problem.

●In order not to get high impact or weight please be cautious about machining a motor shaft or connecting a pulley. And, don't bend, pull and insert a motor cable by inordinate force as a right figure since. It may cause for the snapping of motor cable. Please make sure it is used under safety protection if heavy pressure is added to the cable.



Caution for using

- Do not drop this product or put other impacts.
- Please do not pull the connecting cable of motor.
- Please avoid below place to use this product.
 - A place which can cause vibration or an impact to motor.
 - A place which has a lot of pollutant like dust etc.
 - A place which can cause water or oil etc. to go into motor.
 - A place where flammable or corrosive gas exists.
 - A place where the ambient temperature is beyond -10°C ~ +50°C.
- Temperature rise

Please use it on the surface temperature under 100°C.
The surface temperature of motor can be significantly increased in case of driving the motor by constant current. In this case please consider using forced cooling methods like a fan etc.
- Usage in low temperature

The features of Maximum slewing and Maximum starting frequency may go down as the ambient temperature of ball bearing for the axis of motor falls down.
But use it operating motor slowly as the torque of motor is not damaged.
- Clack sound of electromagnetic brake

When turning on and off the power, this machine could make a clack sound. Since it is caused by brake operation, please be relieved.

※It may cause malfunction if above instructions are not followed.

Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO₂, Nd:YAG)

Autonics Corporation
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Satisfiable Partner For Factory Automation

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