

Autonics

ROTARY ACTUATOR TYPE 5Phase 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

- 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.
- 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.
- 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.
- Please install it in power off.
It may give electronic shock.
- Please earth or install it with housing so that protecting a touch of human body.
It may give electronic shock or human injury.
- Do not disassemble or modify this unit.
It may cause damage to this product or quality down.

Caution

- Please keep the specification of this unit.
It may cause damage to this product.
- 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.
- Please fix this unit on a metal plate tightly.
It may cause human injury or damage of this product and peripheral device.
- Please stop this unit when mechanical trouble occurred.
It may cause a fire or human injury.
- 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.
- Do not carry the cable or rotating part of this unit.
It may cause human injury.
- Please put a cover on the rotating part of this unit.
It may cause human injury.
- Please separate as industrial scrapped material when disuse this unit.
※The specifications on this manual are changeable without notice anytime.

Ordering information

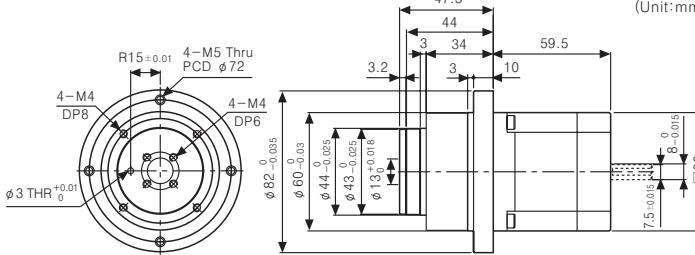
A	<input type="checkbox"/> K - M 5 6 6 W - RA 25	
	Output angle	25 0.144°(360°/2500)
	Basic step angle	36 0.1°(360°/3600)
		50 0.072°(360°/5000)
	Motor type	RA Rotary Actuator type Stepping motor
	Motor shaft type	Single shaft
	Motor length(mm)	W Dual shaft
	Motor frame size(mm×mm)	6 59.5
	Motor phase	6 60 square
	Rated current[A]/Phase	M 1.4
	Max. allowable torque(kgf·cm)	35K 35
		40K 40
		50K 50
		Series

Specifications

Model	A35K-M566(W)-RA25	A40K-M566(W)-RA36	A40K-M566(W)-RA50
Holding torque	35[kgf·cm] 3.5 [N·m]	40[kgf·cm] 4.0 [N·m]	50[kgf·cm] 5.0 [N·m]
Rotor inertia moment	280[g·cm ²] 280×10 ⁻⁴ [kg·m ²]		
Rated current	1.4[A]/Phase		
Basic step angle	0.144°/0.072° (Full/Half)	0.1°/0.05° (Full/Half)	0.072°/0.036° (Full/Half)
Gear ratio(Note)	0~360	0~250	0~180
Position accuracy	±20(0.33°)		
Lost motion	±20(0.33°)		
Operation type	Planetary Gear type		
Drive type	5Phase stepping motor		
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	0°C ~ +50°C (at non-freezing status)	
	Altitude	Max. 1,000m above the sea level	
	Humidity	Max. 85% (at non-dew status)	
Transportation condition	Ambient temperature	-25°C ~ +70°C	
	Altitude	Max. 3,000m above the sea level	
	Humidity	Max. 85% (at non-dew status)	
Standard	IEC34-5		
Protection	IP30		
Weight	Approx. 1.5kg		

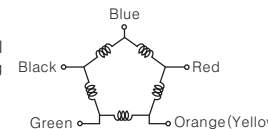
※(Note) When using AC type driver.

Dimensions



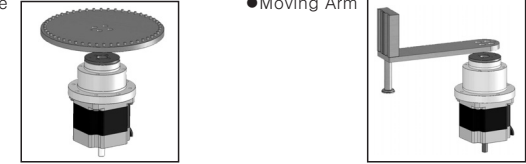
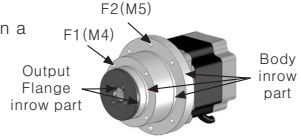
Connection diagram

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



Motor mounting

- Product mounting
 - Use a rotary actuator after mounting inrow on a metal installation plate, which has high heat conductivity. The plate should be over than 5mm thick.
 - As the figure shows, fixing a rotary actuator uses 4 tapped holes for each F1, F2. Screw's connecting torque is 2[N·m] for M4, and 4.4[N·m] for M5.
 - Bending or pulling a motor cable will cause a poor connection and disconnection. Make sure to set a safety device for pushing pressure.
- Installing accessories(Table, Arm, etc.)
 - Install accessories on a flange of actuator's output part by M4 bolt. Inrow ϕ 13 is processed to c0.3. Install a table part with less than c0.2 of processing. Pressing-push a positioning plate on an accessory part. And connect to the positioning hall of output flange by press pushing on an accessory part. (forced pushing is denied.)
 - If you use a hammer for pushing accessories around an inrow, it will cause damage on a product. Install the product cautiously.
 - The accessories of output part need to be fixed securely. If it is separated with actuator during operation, it will cause a series accident.
- Product operation
 - Use this product within rated specification.
 - Do not apply a rotational load for stop status.
 - Do not apply an extreme load on a product in order not to be stepped out.
 - Use a sensor for detecting a dividing position and ORG point.
- Applications
 - Index Table



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 0°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
 - When ambient temperature is too low, frictional torque is increased because the power of ball bearing and gear head become weak. Because of this, the characteristic of starting operation's frequency and maximum operation could be decreased.

※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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