

5-Phase Stepper Motor

■ Ordering Information

● Application model: Shaft type, Hollow shaft type, Shaft type+Built-in brake type

A		8K	-	M	5	6	6		-		B			
											Built-in brake type	No-mark	Standard type	
												B ^{※1}	Built-in brake type	
											Wire connection	No-mark	Pentagon	
												S ^{※2}	Standard	
											Shaft type	No-mark ^{※1}	Single shaft	
											Motor length	W	Dual shaft	
											Motor frame size (width×height)	3	30.5mm	
												5	46.5mm	
												3	33mm	
												4	39mm	
												5	47mm	
												4	48.5mm	
												6	59.5mm	
												9	89mm	
												6	68mm	
												9	98mm	
												13	128mm	
												5	5 phase	
												S	0.75 A/Phase	
												M	1.4 A/Phase	
												G	2.8 A/Phase	
												Square	kgf·cm (refer to motor specifications)	
												No-mark	Shaft type	
												H	Hollow shaft type	
												Autonics motor		

※1: Built-in brake type provides single shaft type only.

※2: Standard wiring is optional. (except frame size 24mm motor, A4K-G564(W), A8K-G566(W))

■ Ordering Information

● Application model: Geared type, Geared+Built-in brake type, Rotary actuator type,

Rotary actuator+Built-in brake type

A		-	M	5					-							
											Gear ratio	5	1:5			
												7.2	1:7.2			
												10	1:10			
											Motor type	G	Geared type			
												GB ^{※1}	Geared+Built-in brake type			
											Shaft type	R	Rotary actuator type			
												RB ^{※1}	Rotary actuator+Built-in brake type			
											Motor length	No-mark ^{※1}	Single shaft			
												W	Dual shaft			
											Motor frame size (width×height)	5	47mm			
												6	59.5mm			
												9	98mm			
												4	42mm×42mm			
												6	60mm×60mm			
												9	85mm×85mm			
												5	5 Phase			
												S	0.75 A/Phase			
												M	1.4 A/Phase			
												G	2.8 A/Phase			
												10	10 kgf·cm	50	50 kgf·cm	
												15	15 kgf·cm	140	140 kgf·cm	
												35	35 kgf·cm	200	200 kgf·cm	
												40	40 kgf·cm			
												Autonics motor				

※1: Built-in brake type provides single shaft type only.

5-Phase Stepper Motor

Specifications

Motor		Model	Rated current (A/Phase)	Max. holding torque (kgf·cm)	Max. allowable torque (kgf·cm)	Moment of rotor inertia (g·cm ²)	Winding resistance (Ω)	Motor length (mm)
Frame size	Type							
24mm	Shaft type	02K-S523(W)	0.75	0.18	—	4.2	1.1	30.5
		04K-S525(W)	0.75	0.28	—	8.2	1.7	46.5
42mm	Shaft type / Shaft + Built-in brake type	A1K-S543(W)-B	0.75	1.3	—	35	1.7	33/56
		A2K-S544(W)-B	0.75	1.8	—	54	2.2	39/62
		A2K-M544(W)	1.4	1.8	—	54	2.2	39
		A3K-S545(W)-B	0.75	2.4	—	68	2.2	47/70
		AH1K-S543	0.75	1.3	—	35	1.7	33
	Hollow shaft type	AH2K-S544	0.75	1.8	—	54	2.2	39
		AH3K-S545	0.75	2.4	—	68	2.2	47
		A10K-S545(W)-G5	0.75	—	10	68	2.2	74.5
	Geared type	A15K-S545(W)-G7.2	0.75	—	15	68	2.2	74.5
		A15K-S545(W)-G10	0.75	—	15	68	2.2	74.5
	Geared + Built-in brake type	A10K-S545-GB5	0.75	—	10	68	2.2	97.5
		A15K-S545-GB7.2	0.75	—	15	68	2.2	97.5
		A15K-S545-GB10	0.75	—	15	68	2.2	97.5
60mm	Shaft type / Shaft + Built-in brake type	A4K-S564(W)-B	0.75	4.2	—	175	2.6	48.5/75
		A4K-M564(W)-B	1.4	4.2	—	175	0.8	48.5/75
		A4K-G564(W) Line-up	2.8	4.2	—	175	0.26	48.5
		A8K-S566(W)-B	0.75	8.3	—	280	4.0	59.5/86
		A8K-M566(W)-B	1.4	8.3	—	280	1.1	59.5/86
		A8K-G566(W) Line-up	2.8	8.3	—	280	0.35	59.5
		A16K-M569(W)-B	1.4	16.6	—	560	1.8	89/115.5
		A16K-G569(W)-B	2.8	16.6	—	560	0.56	89/115.5
	Hollow shaft type	AH4K-S564(W)	0.75	4.2	—	175	2.6	48.5
		AH4K-M564(W)	1.4	4.2	—	175	0.8	48.5
		AH8K-S566(W)	0.75	8.3	—	280	4.0	59.5
		AH8K-M566(W)	1.4	8.3	—	280	1.1	59.5
		AH16K-M569(W)	1.4	16.6	—	560	1.8	89
		AH16K-G569(W)	2.8	16.6	—	560	0.56	89
	Geared type	A35K-M566(W)-G5	1.4	—	35	280	1.1	94.5
		A40K-M566(W)-G7.2	1.4	—	40	280	1.1	94.5
		A50K-M566(W)-G10	1.4	—	50	280	1.1	94.5
	Geared + Built-in brake type	A35K-M566-GB5	1.4	—	35	280	1.1	121
		A40K-M566-GB7.2	1.4	—	40	280	1.1	121
		A50K-M566-GB10	1.4	—	50	280	1.1	121
	Rotary actuator type	A35K-M566(W)-R5	1.4	—	35	280	1.1	93.5
		A40K-M566(W)-R7.2	1.4	—	40	280	1.1	93.5
		A50K-M566(W)-R10	1.4	—	50	280	1.1	93.5
	Rotary actuator + Built-in brake type	A35K-M566-RB5	1.4	—	35	280	1.1	120
		A40K-M566-RB7.2	1.4	—	40	280	1.1	120
		A50K-M566-RB10	1.4	—	50	280	1.1	120
85mm	Shaft type / Shaft + Built-in brake type	A21K-M596(W)-B	1.4	21	—	1400	1.76	68/103
		A21K-G596(W)-B	2.8	21	—	1400	0.4	68/103
		A41K-M599(W)-B	1.4	41	—	2700	2.6	98/133
		A41K-G599(W)-B	2.8	41	—	2700	0.58	98/133
		A63K-M5913(W)-B	1.4	63	—	4000	3.92	128/163
		A63K-G5913(W)-B	2.8	63	—	4000	0.86	128/163
	Hollow shaft type	AH21K-M596(W)	1.4	21	—	1400	1.76	68
		AH21K-G596(W)	2.8	21	—	1400	0.4	68
		AH41K-M599(W)	1.4	41	—	2700	2.6	98
		AH41K-G599(W)	2.8	41	—	2700	0.58	98
		AH63K-M5913(W)	1.4	63	—	4000	3.92	128
		AH63K-G5913(W)	2.8	63	—	4000	0.86	128
	Geared type	A140K-M599(W)-G5	1.4	—	140	2700	2.6	145
		A140K-G599(W)-G5	2.8	—	140	2700	0.58	145
		A200K-M599(W)-G7.2	1.4	—	200	2700	2.6	145
		A200K-G599(W)-G7.2	2.8	—	200	2700	0.58	145
		A200K-M599(W)-G10	1.4	—	200	2700	2.6	145
		A200K-G599(W)-G10	2.8	—	200	2700	0.58	145
	Geared + Built-in brake type	A140K-M599-GB5	1.4	—	140	2700	2.6	180
		A140K-G599-GB5	2.8	—	140	2700	0.58	180
		A200K-M599-GB7.2	1.4	—	200	2700	2.6	180
		A200K-G599-GB7.2	2.8	—	200	2700	0.58	180
		A200K-M599-GB10	1.4	—	200	2700	2.6	180
		A200K-G599-GB10	2.8	—	200	2700	0.58	180

※(W) stands for dual shaft of motor. (The built-in brake type provides single shaft type only.)

※Motor length is measured without shaft.

※Hollow shaft type with standard wiring is optional. (except frame size 24mm motor.)

(A) Photoelectric
Sensors

(B) Fiber
Optic
Sensors

(C) Door/Area
Sensors

(D) Proximity
Sensors

(E) Pressure
Sensors

(F) Rotary
Encoders

(G) Connectors/
Connector Cables/
Sensor Distribution
Boxes/Sockets

(H) Temperature
Controllers

(I) SSRs / Power
Controllers

(J) Counters

(K) Timers

(L) Panel
Meters

(M) Tacho /
Speed / Pulse
Meters

(N) Display
Units

(O) Sensor
Controllers

(P) Switching
Mode Power
Supplies

(Q) Stepper Motors
& Drivers
& Controllers

(R) Graphic/
Logic
Panels

(S) Field
Network
Devices

(T) Software

5-Phase Stepper Motor

■ Specifications

● Frame size 24mm

Model	02K-S523(W)		04K-S525(W)
Max. Holding torque	0.18kgf·cm (0.018N·m)		0.28kgf·cm (0.027N·m)
Rotor moment of inertia	4.2g·cm ² (4.2×10 ⁻⁷ kg·m ²)		8.2g·cm ² (8.2×10 ⁻⁷ kg·m ²)
Rated current	0.75A/Phase		
Standard step angle	0.72°/ 0.36° (full/half step)		
Insulation class	B type (130°C)		
Insulation resistance	Over 100MΩ (at 500VDC megger) between motor coil-case		
Dielectric strength	0.5kVAC 50/60Hz for 1 minute between motor coil-case		
Environment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C	
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH	
Protection structure	IP30 (IEC34-5 standard)		
Weight ^{※1}	Approx. 0.10kg (approx. 0.08kg)		Approx. 0.16kg (approx. 0.12kg)
Reference	Q-29 to 31		

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

● Frame size 42mm

Model	Shaft type	A1K-S543(W)	A2K-S544(W)	A2K-M544(W)	A3K-S545(W)	—	—	—
	Hollow shaft type	AH1K-S543	AH2K-S544	—	AH3K-S545	—	—	—
	Shaft type + Built-in brake type	A1K-S543-B	A2K-S544-B	—	A3K-S545-B	—	—	—
	Shaft type+ Geared type	—	—	—	—	A10K-S545(W)-G5	A15K-S545(W)-G7.2	A15K-S545(W)-G10
	Geared + Built-in brake type	—	—	—	—	A10K-S545-GB5	A15K-S545-GB7.2	A15K-S545-GB10
Max. allowable torque		—	—	—	—	10 kgf·cm (1.0 N·m)	15 kgf·cm (1.5 N·m)	15 kgf·cm (1.5 N·m)
Max. Holding torque		1.3 kgf·cm (0.13 N·m)	1.8 kgf·cm (0.18 N·m)		2.4 kgf·cm (0.24 N·m)	—	—	—
Rotor moment of inertia		35g·cm ² (35×10 ⁻⁷ kg·m ²)	54g·cm ² (54×10 ⁻⁷ kg·m ²)		68g·cm ² (68×10 ⁻⁷ kg·m ²)	68g·cm ² (68×10 ⁻⁷ kg·m ²)		
Rated current		0.75A/Phase		1.4A/Phase	0.75A/Phase			
Standard step angle		0.72° / 0.36° (full/half step)				0.144° / 0.072° (full/half step)	0.1° / 0.05° (full/half step)	0.072° / 0.036° (full/half step)
Gear ratio		—				1:5	1:7.2	1:10
Allowable speed range		—				0 to 360rpm	0 to 250rpm	0 to 180rpm
Backlash [min]		—				±35' (0.58°)		
Electromagnetic brake	Rated excitation voltage	24VDC ±10% (non-polarity)						
	Rated excitation current	0.2A						
	Static friction torque	1.8kgf·cm						
	Rotation part inertia moment	3.0×10 ⁻⁷ kg·cm ²						
	Operating time	Max. 25ms						
	Releasing time	Max. 15ms						
Insulation class		B type (130°C)						
Insulation resistance		Over 100MΩ (at 500VDC megger) between motor coil-case						
Dielectric strength		1kVAC (at 0.75 A/Phase is 0.5kVAC) 50/60Hz for 1 minute between motor coil-case						
Environment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C						
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH						
Protection structure		IP30 (IEC34-5 standard)						
Weight ^{*1}		Shaft type: Approx. 0.34kg (approx. 0.25kg), Hollow shaft type: Approx. 0.35kg (approx. 0.25kg), Built-in brake type: Approx. 0.44kg (approx. 0.39kg)	Shaft type: Approx. 0.39kg (approx. 0.3kg), Hollow shaft type: Approx. 0.4kg (approx. 0.3kg), Built-in brake type: Approx. 0.49kg (approx. 0.44kg)		Shaft type: Approx. 0.49kg (approx. 0.4kg) Hollow shaft type: Approx. 0.5kg (approx. 0.4kg), Built-in brake type: Approx. 0.59kg (approx. 0.54kg)	Geared type: Approx. 0.68kg (approx. 0.58kg), Geared+Built-in brake type: Approx. 0.78kg (approx. 0.72kg)		
Reference		Q-29 to 39						

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

5-Phase Stepper Motor

■ Specifications

● Frame size 60mm

Model	Shaft type	A4K-S564(W)	A4K-M564(W)	A4K-G564(W)	A8K-S566(W)	A8K-M566(W)	A8K-G566(W)	A16K-M569(W)	A16K-G569(W)	
	Hollow shaft type	AH4K-S564(W)	AH4K-M564(W)	—	AH8K-S566(W)	AH8K-M566(W)	—	AH16K-M569(W)	AH16K-G569(W)	
	Shaft type+ Built-in brake type	A4K-S564-B	A4K-M564-B	—	A8K-S566-B	A8K-M566-B	—	A16K-M569-B	A16K-G569-B	
Max. Holding torque		4.2kgf·cm (0.41N·m)			8.3kgf·cm (0.81N·m)			16.6kgf·cm (1.63N·m)		
Rotor moment of inertia		175g·cm ² (175×10 ⁻⁷ kg·m ²)			280g·cm ² (280×10 ⁻⁷ kg·m ²)			560g·cm ² (560×10 ⁻⁷ kg·m ²)		
Rated current		0.75A/Phase		1.4A/Phase	2.8A/Phase	0.75A/Phase	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase
Standard step angle		0.72°/ 0.36° (full/half step)								
Electromagnetic brake	Rated excitation voltage	24VDC ±10% (non-polarity)								
	Rated excitation current	0.33A								
	Static friction torque	8kgf·cm								
	Rotation part inertia moment	29×10 ⁻⁷ kg·cm ²								
	Operating time	Max. 25ms								
	Releasing time	Max. 20ms								
Insulation class		B type (130°C)								
Insulation resistance		Over 100MΩ (at 500VDC megger) between motor coil-case								
Dielectric strength		1kVAC (at 0.75 A/Phase is 0.5kVAC) 50/60Hz for 1 minute between motor coil-case								
Environ- ment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C								
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH								
Protection structure		IP30 (IEC34-5 standard)								
Weight※1		Standard type: Approx. 0.85kg (approx. 0.6kg), Hollow shaft type: Approx. 0.87kg (approx. 0.6kg), Built-in brake type: Approx. 1.03kg (approx. 0.95kg)			Standard type: Approx. 1.05kg (approx. 0.8kg), Hollow shaft type: Approx. 1.07kg (approx. 0.8kg), Built-in brake type: Approx. 1.33kg (approx. 1.25kg)			Standard type: Approx. 1.55kg (approx. 1.3kg), Hollow shaft type: Approx. 1.57kg (approx. 1.3kg), Built-in brake type: Approx. 1.73kg (approx. 1.65kg)		
Reference		Q-29 to 35								

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

● Frame size 60mm

Model	Shaft type+ Geared type	A35K-M566(W)-G5	A40K-M566(W)-G7.2	A50K-M566(W)-G10
	Geared type+ Built-in brake type	A35K-M566-GB5	A40K-M566-GB7.2	A50K-M566-GB10
	Rotary actuator type	A35K-M566(W)-R5	A40K-M566(W)-R7.2	A50K-M566(W)-R10
	Rotary actuator+ Built-in brake type	A35K-M566-RB5	A40K-M566-RB7.2	A50K-M566-RB10
	Max. Holding torque	35kgf·cm (3.4N·m)	40kgf·cm (3.9N·m)	50kgf·cm (4.9N·m)
	Rotor moment of inertia	280g·cm ² (280×10 ⁻⁷ kg·m ²)		
	Rated current	1.4A/Phase		
	Standard step angle	0.144°/ 0.072° (full/half step)	0.1°/ 0.05° (full/half step)	0.072°/ 0.036° (full/half step)
	Gear ratio	1:5	1:7.2	1:10
	Allowable speed range	0 to 360rpm	0 to 250rpm	0 to 180rpm
	Backlash[min]	±20' (0.33°)		
Electromagnetic brake	Rated excitation voltage	24VDC ±10% (non-polarity)		
	Rated excitation current	0.33A		
	Static friction torque	Min. 8kgf·cm		
	Rotation part inertia moment	2.9×10 ⁻⁶ kgf·cm ²		
	Operating time	Max. 20ms		
	Releasing time	Max. 25ms		
	Absolute position error ^{※1}	±20 minute (0.33°)		
	Lost motion ^{※1}	±20 minute (0.33°)		
	Insulation class	B type (130°C)		
	Insulation resistance	Over 100MΩ (at 500VDC megger) between motor coil-case		
	Dielectric strength	1kVAC 50/60Hz for 1 minute between motor coil-case		
Environment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C		
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH		
	Protection structure	IP30 (IEC34-5 standard)		
	Weight ^{※2}	Geared type: Approx. 1.57kg (approx. 1.3kg), Geared+Built-in brake type: Approx. 1.65kg (approx. 1.57kg), Rotary actuator type: Approx. 1.4kg (approx. 1.3kg), Rotary actuator+Built-in brake type: Approx. 1.7kg (approx. 1.6kg)		
	Reference	Q-36 to 39		

※1: It is only available for rotary actuator type.

※2: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

(A)	Photoelectric Sensors
(B)	Fiber Optic Sensors
(C)	Door/Area Sensors
(D)	Proximity Sensors
(E)	Pressure Sensors
(F)	Rotary Encoders
(G)	Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets
(H)	Temperature Controllers
(I)	SSRs / Power Controllers
(J)	Counters
(K)	Timers
(L)	Panel Meters
(M)	Tacho / Speed / Pulse Meters
(N)	Display Units
(O)	Sensor Controllers
(P)	Switching Mode Power Supplies
(Q)	Stepper Motors & Drivers & Controllers
(R)	Graphic/ Logic Panels
(S)	Field Network Devices
(T)	Software

5-Phase Stepper Motor

■ Specifications

● Frame size 85mm

Model	Shaft type	A21K-M596(W)	A21K-G596(W)	A41K-M599(W)	A41K-G599(W)	A63K-M5913(W)	A63K-G5913(W)
	Hollow shaft type	AH21K-M596(W)	AH21K-G596(W)	AH41K-M599(W)	AH41K-G599(W)	AH63K-M5913(W)	AH63K-G5913(W)
	Shaft type+ Built-in brake type	A21K-M596-B	A21K-G596-B	A41K-M599-B	A41K-G599-B	A63K-M5913-B	A63K-G5913-B
Max. Holding torque		21kgf·cm (2.1N·m)		41kgf·cm (4.0N·m)		63kgf·cm (6.2N·m)	
Rotor moment of inertia		1400g·cm ² (1400×10 ⁻⁷ kg·m ²)		2700g·cm ² (2700×10 ⁻⁷ kg·m ²)		4000g·cm ² (4000×10 ⁻⁷ kg·m ²)	
Rated current		1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase
Standard step angle		0.72°/ 0.36° (full/half step)					
Electromagnetic brake	Rated excitation voltage	24VDC ±10% (non-polarity)					
	Rated excitation current	0.62A					
	Static friction torque	40kgf·cm					
	Rotation part inertia moment	153×10 ⁻⁷ kg·cm ²					
	Operating time	Max. 60ms					
	Releasing time	Max. 15ms					
Insulation class		B type (130°C)					
Insulation resistance		Over 100MΩ (at 500VDC megger) between motor coil-case					
Dielectric strength		1kVAC 50/60Hz for 1 minute between motor coil-case					
Environment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C					
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH					
Protection structure		IP30 (IEC34-5 standard)					
Weight ^{*1}		Shaft type: Approx. 2.15kg (approx. 1.7kg), Hollow shaft type: Approx. 2.18kg (approx. 1.7kg), Built-in brake type: Approx. 2.74kg (approx. 2.64kg)		Shaft type: Approx. 3.25kg (approx. 2.8kg), Hollow shaft type: Approx. 3.28kg (approx. 2.8kg), Built-in brake type: Approx. 3.84kg (approx. 3.74kg)		Shaft type: Approx. 4.25kg (approx. 3.8kg), Hollow shaft type: Approx. 4.28kg (approx. 3.8kg), Built-in brake type: Approx. 4.84kg (approx. 4.74kg)	
Reference		Q-29 to 35					

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

● Frame size 85mm

Model	Shaft type+ Geared type	A140K- M599(W)-G5	A140K- G599(W)-G5	A200K- M599(W)-G7.2	A200K- G599(W)-G7.2	A200K- M599(W)-G10	A200K- G599(W)-G10
	Geared+ Built-in brake type	A140K- M599-GB5	A140K- G599-GB5	A200K- M599-GB7.2	A200K- G599-GB7.2	A200K- M599-GB10	A200K- G599-GB10
Max. Holding torque		140kgf·cm (13.7N·m)			200kgf·cm (19.6N·m)		200kgf·cm (19.6N·m)
Rotor moment of inertia		2700g·cm ² (270×10 ⁻⁷ kg·m ²)					
Rated current		1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase
Standard step angle		0.144° / 0.072° (full/half step)			0.072° / 0.036° (full/half step)		
Gear ratio		1:5			1:10		
Allowable speed range		0 to 360rpm			0 to 180rpm		
Backlash[min]		±15' (0.25°)					
Electromagnetic brake	Rated excitation voltage	24VDC ±10% (non-polarity)					
	Rated excitation current	0.62A					
	Static friction torque	40kgf·cm					
	Rotation part inertia moment	15.3×10 ⁻⁶ kgf·cm ²					
	Operating time	Max. 15ms					
	Releasing time	Max. 60ms					
Insulation class		B type (130°C)					
Insulation resistance		Over 100MΩ (at 500VDC megger) between motor coil-case					
Dielectric strength		1kVAC 50/60Hz for 1 minute between motor coil-case					
Environment	Ambient temp.	-10 to 50°C, storage: -25 to 85°C					
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH					
Protection structure		IP30 (IEC34-5 standard)					
Weight ^{※1}		Geared type: Approx. 4.88kg (approx. 4.4kg), Geared+Built-in brake type: Approx. 5.5kg (approx. 5.2kg)					
Reference		Q-36 to 39					

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.