

0.72° Stepping Motor and Driver Package RK Series

● Additional Information ●
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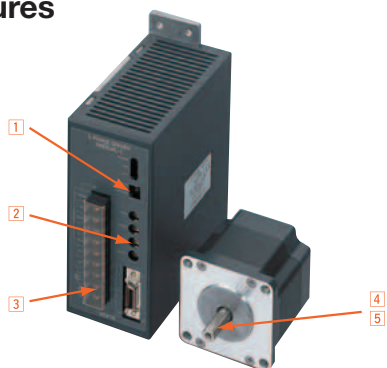
This is the basic model for positioning operation. It improves the response and reduces vibrations at the same time, making the stepping motor easier to use. The **RK Series** offers various types including a standard type, a terminal box type, and four geared types. Three frame sizes of 42 mm (1.65 in.), 60 mm (2.36 in.) and 85 mm (3.35 in.) [90 mm (3.54 in.)] are available. The wide-ranging motor variations and affordable price make the **RK Series** a perfect solution for your various applications.



● For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

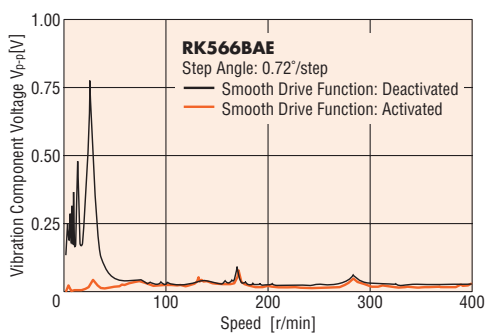


Features

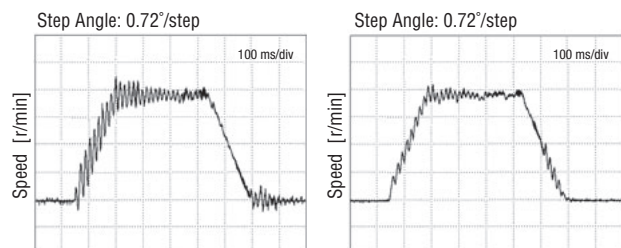


1 Smooth Drive Function

The smooth drive function ensures low-vibration and low-noise operation at low speeds by internally executing microstepping within the driver, working independent of the input pulse frequency of your controller.



The smooth drive function of the **RK Series** improves rotor settling time performance.



Conventional Model

RK (Smooth drive: ON)

2 Microstep Drive System

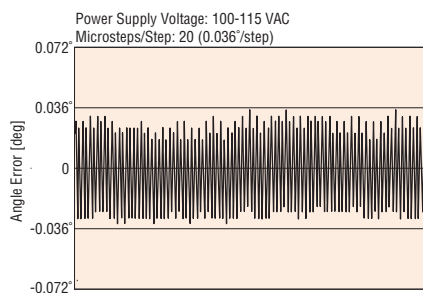
The motor's basic step angle is divided by a maximum of 250 without the use of a reduction mechanism or other mechanical means. 16 resolution levels are available to set the desired resolution. This enables fine positioning and the further reduction of vibration and noise. A motion sequence of "low-speed transfer → high-speed return" can easily be performed without the need for changing from a microstep pulse frequency to a full step pulse frequency. The **RK Series** can also be used in full-step operation.

3 100-115 VAC, 200-230 VAC Power Supply Variation

The **RK Series** can be used with most common power supplies available around the world. They also comply with the major safety standards, ensuring safe operation.

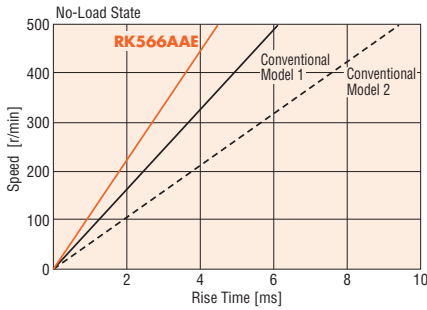
4 Improved Angle Accuracy

Angle accuracy may worsen with microstep drivers, due to the effect of poor current control. However, the drivers used in the **RK Series** are designed to ensure that the motor operates at maximum accuracy.



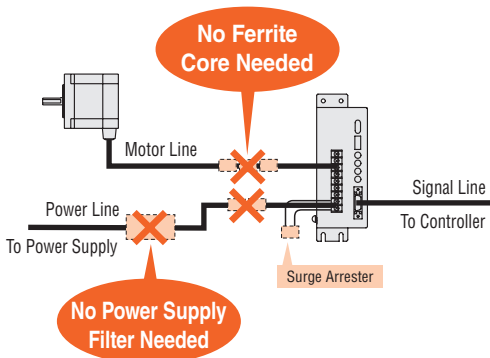
Improved Response

The **RK** Series, with its high starting frequency, shortens the machine cycle without affecting acceleration/deceleration rates. This produces a significant savings in time for an operation in which the same cycle is repeated thousands of times each day.



Safe Operation in Major Countries around the World. Compliance with Safety Standards

The **RK** Series is recognized by the UL/CSA Standards and conforms to the EN Standards. (With the **RK54** type, only the driver conforms to the CSA Standards.) The CE Marking certifies compliance with the EMC Directive and Low Voltage Directive. The **RK** Series conforms to the EMC Directive with the addition of only a surge arrester. The **RK** Series doesn't require an external ferrite core or filter in the motor line or power line.



Protective Earth Terminal

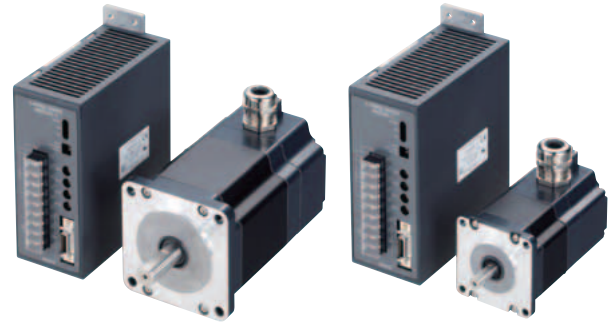
[Excluding motors with a frame size of 42 mm (1.65 in.)]



Extended Bearing Life

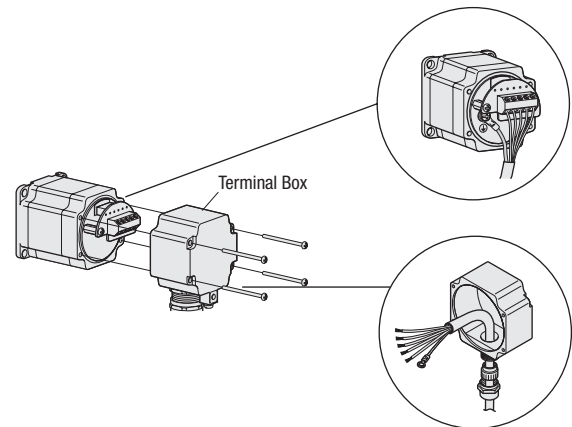
The life of a motor is affected by its bearing. The **RK** Series achieves approximately twice the life of a conventional motor by adopting a modified bearing. [Available only with the standard type with a frame size of 60 mm (2.36 in.) or 85 mm (3.35 in.)]

The Terminal Box Type Motor Conforms to the IP65 Standard for Ingress Protection against Dust and Water. (Excluding shaft penetration)



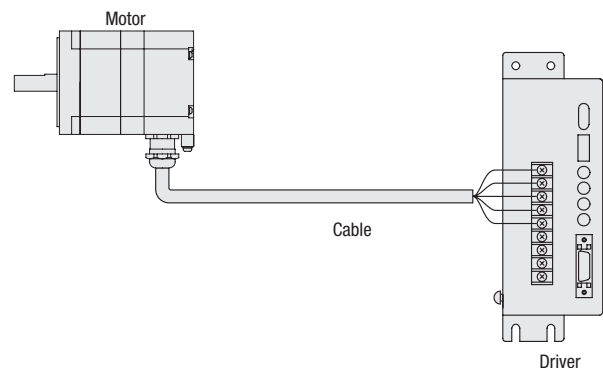
Terminal-Block Connection Design

The motor can be wired directly from its terminal block.



No Motor/Driver Relay

Since the motor cable can be connected directly with the driver terminals, there is no need for wire connection or soldering on a relay terminal block.



Encoder Option Available







500 pulse/rev, 3 channel, TTL. Motor rotations can be detected by taking in encoder output signals into a programmable controller (not supplied).



Introduction	
AC Input Motor & Driver	
OSTEP / Geared AR	0.36°
OSTEP / Geared AS	0.36°
RK / Geared	0.72°
UMK	0.9°/1.8°
AR / Geared	0.36°
ASX / Geared	0.36°
CRK / Geared	0.36°/0.72°
CMK / Geared	0.9°/1.8°
RBK / Geared	1.8°
PK	0.36°
PK	0.72°
PK	0.9°
PK/PV	1.8°
PK	Geared
Controllers / SCA10 / EMP400 / SG80301	
Accessories	

RK Series Lineup

Characteristics Comparison for Motors and Geared Motors


Motor Type Geared Type	Features	Permissible Torque Maximum Torque [N·m (lb-in)]	Backlash [arc min (degrees)]	Basic Resolution [deg/step]	Output Shaft Speed [r/min]
Step Angle 0.72° Standard Type 	<ul style="list-style-type: none"> Basic model of the RK Series 	Maximum Holding Torque 6.3	—	0.72	4000
Step Angle 0.72° Standard Type Terminal Box 	<ul style="list-style-type: none"> The industrial connector type motor offering IP65 ingress protection against dust and water. 	Maximum Holding Torque 6.3	—	0.72	4000
TH Geared Type (Parallel shaft) 	<ul style="list-style-type: none"> A wide variety of low gear ratios, high-speed operations Gear ratios: 3.6, 7.2, 10, 20, 30 	12	45 (0.75)	0.024	500
PS Geared Type (Planetary) 	<ul style="list-style-type: none"> High permissible/maximum torque A wide variety of gear ratios for selecting the desired step angle (resolution) Centered output shaft Gear ratios: 5, 7.2, 10, 25, 36, 50 	Permissible Torque 37 Maximum Torque 60	25 (0.42)	0.0144	600
PN Geared Type (Planetary) 	<ul style="list-style-type: none"> High speed (low gear ratio), high accuracy positioning High permissible/maximum torque A wide variety of gear ratios for selecting the desired step angle (resolution) Centered output shaft Gear ratios: 5, 7.2, 10, 25, 36, 50 	Permissible Torque 37 Maximum Torque 60	3 (0.05)	0.0144	600
Harmonic Geared Type (Harmonic drive) 	<ul style="list-style-type: none"> High accuracy positioning High permissible/maximum torque High gear ratios, high resolution Centered output shaft Gear ratios: 50, 100 	Permissible Torque 37 Maximum Torque 55	0	0.0072	70

Note

The values shown above must be used as reference. These values vary depending on the frame size and gear ratio.

RK Series offers various motor frame sizes in accordance with the motor type and power supply voltage, as shown below.

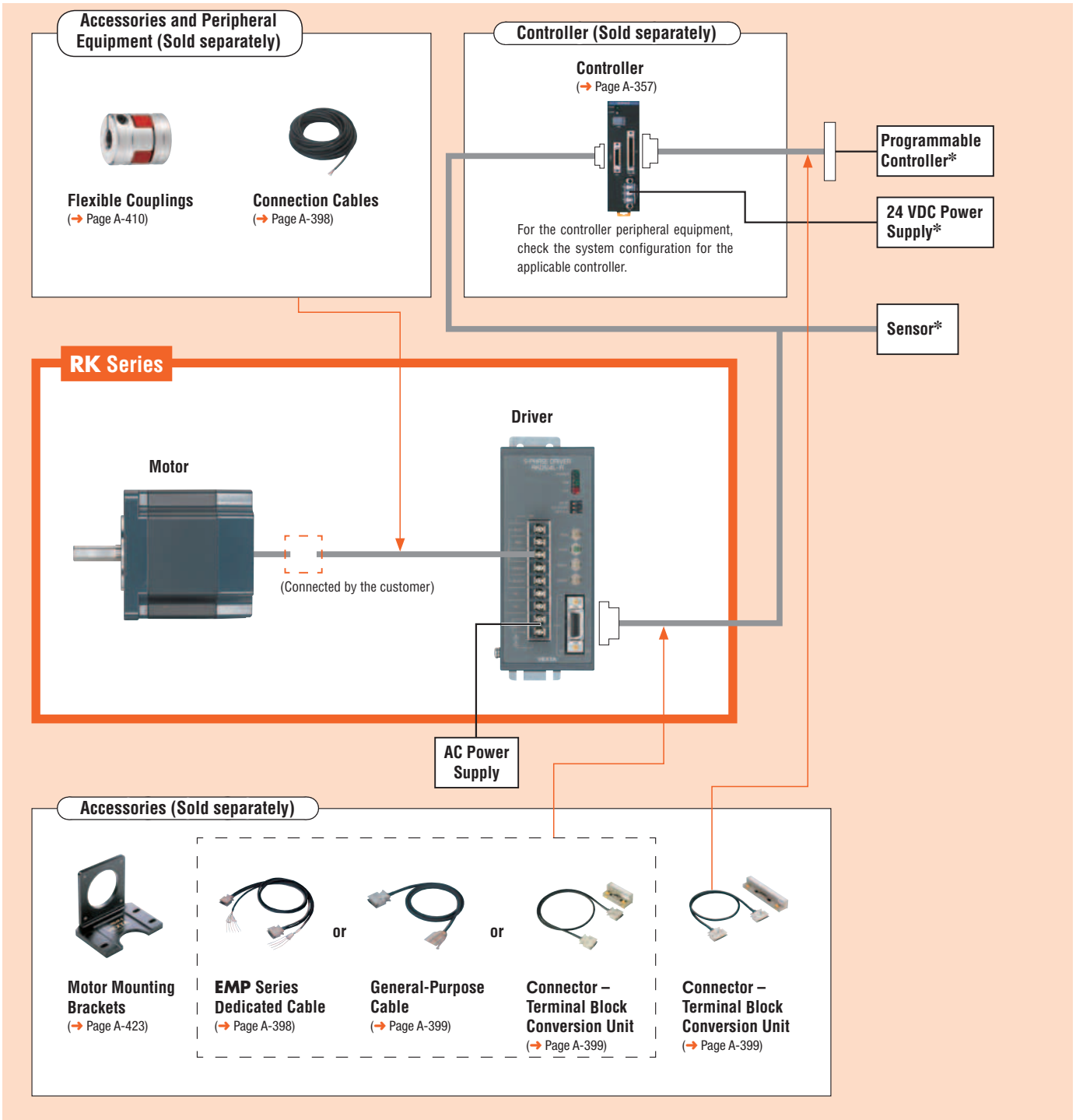
[□42 (□1.65): indicates a motor frame size of 42 mm (1.65 in.)]

	Power Supply Voltage	Step Angle 0.72° Standard Type*	Step Angle 0.72° Standard Type Terminal Box	TH Geared Type*	PS Geared Type*	PN Geared Type	Harmonic Geared Type*
AC Input Type RK Series 	Single-Phase 100-115 VAC	□42 (□1.65) □60 (□2.36) □85 (□3.35)	□60 (□2.36) □85 (□3.35)	□42 (□1.65) □60 (□2.36) □90 (□3.54)	□42 (□1.65) □60 (□2.36) □90 (□3.54)	□42 (□1.65) □60 (□2.36) □90 (□3.54)	□42 (□1.65) □60 (□2.36) □90 (□3.54)
	Single-Phase 200-230 VAC	□60 (□2.36) □85 (□3.35)	□60 (□2.36) □85 (□3.35)	□60 (□2.36) □90 (□3.54)	□60 (□2.36) □90 (□3.54)	□60 (□2.36) □90 (□3.54)	□60 (□2.36) □90 (□3.54)

*Motor with an encoder is also available.

System Configuration

An example of a single-axis system configuration with the **EMP400** Series controller.



Example of System Configuration

RK Series	Sold Separately					
	Controller	Connection Cable [5 m (16.4 ft.)]	Motor Mounting Bracket	Flexible Coupling	Connection Cable EMP Series Dedicated Type [1 m (3.3 ft.)]	Connector – Terminal Block Conversion Unit [1 m (3.3 ft.)]
RK564AAE	EMP401-1	CC05PK5	PAL2P-5A	MCS200808	CC01EMP5	CC50T1

● The system configuration shown above is an example. Other combinations are available.

* Not supplied

Product Number Code

Step Angle 0.72° Standard Type

RK 5 9 13 A A T

① ② ③ ④ ⑤ ⑥ ⑦

Geared Type

RK 5 6 6 B A E - N 5

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Step Angle 0.72° Standard Type with Encoder

RK 5 6 4 A C E - R 2 7

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

Geared Type with Encoder

RK 5 6 4 A C E R 2 7 T 1 0

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

①	Series	RK: RK Series
②	5: 5-Phase	
③	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.) 9: 85 mm (3.35 in.) [90 mm (3.54 in.) sq. for geared type]
④	Motor Case Length	
⑤	Motor Shaft Type	A: Single Shaft B: Double Shaft
⑥	Power Supply Voltage	A: Single-Phase 100-115 VAC C: Single-Phase 200-230 VAC
⑦	Motor Classification	
⑧	Gearhead Type	T: TH Geared Type PS: PS Geared Type N: PN Geared Type H: Harmonic Geared Type
⑨	Gear Ratio	

①	Series	RK: RK Series
②	5: 5-Phase	
③	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.) 9: 85 mm (3.35 in.) [90 mm (3.54 in.) sq. for geared type]
④	Motor Case Length	
⑤	Motor Shaft Type	A: Single Shaft
⑥	Power Supply Voltage	A: Single-Phase 100-115 VAC C: Single-Phase 200-230 VAC
⑦	Motor Classification	
⑧	Encoder Version	
⑨	Encoder Output	2: 3-Channel A, B, Index
⑩	Encoder Resolution	7: 500 P/R
⑪	Gearhead Type	T: TH Geared Type PS: PS Geared Type H: Harmonic Geared Type
⑫	Gear Ratio	

Product Line

Step Angle 0.72° Standard Type

Power Supply Voltage	Model (Single shaft)	Model (Double shaft)
Single-Phase 100-115 VAC	RK543AA	RK543BA
	RK544AA	RK544BA
	RK545AA	RK545BA
	RK564AAE	RK564BAE
	RK566AAE	RK566BAE
	RK569AAE	RK569BAE
Single-Phase 200-230 VAC	RK596AAE	RK596BAE
	RK599AAE	RK599BAE
	RK5913AAE	RK5913BAE
	RK564ACE	RK564BCE
	RK566ACE	RK566BCE
	RK569ACE	RK569BCE
Single-Phase 200-230 VAC	RK596ACE	RK596BCE
	RK599ACE	RK599BCE
	RK5913ACE	RK5913BCE

Step Angle 0.72° Standard Type with Encoder

Power Supply Voltage	Model
Single-Phase 100-115 VAC	RK543AA-R27
	RK544AA-R27
	RK545AA-R27
	RK564AAE-R27
	RK566AAE-R27
	RK569AAE-R27
Single-Phase 200-230 VAC	RK596AAE-R27
	RK599AAE-R27
	RK5913AAE-R27
	RK564ACE-R27
	RK566ACE-R27
	RK569ACE-R27
Single-Phase 200-230 VAC	RK596ACE-R27
	RK599ACE-R27
	RK5913ACE-R27

Step Angle 0.72° Standard Type Terminal Box

Power Supply Voltage	Model
Single-Phase 100-115 VAC	RK564AAT
	RK566AAT
	RK569AAT
	RK596AAT
	RK599AAT
Single-Phase 200-230 VAC	RK5913AAT
	RK564ACT
	RK566ACT
	RK569ACT
	RK596ACT
Single-Phase 200-230 VAC	RK599ACT
	RK5913ACT

The following items are included in each product.
 Motor, Parallel Key*, Driver, Connector for Input/Output Signal, Encoder Cable*, Operating Manual
 *1 Only for the products with a key slot on the output shaft
 *2 Only for the products with an encoder

●TH Geared Type

Power Supply Voltage	Model (Single shaft)	Model (Double shaft)
Single-Phase 100-115 VAC	RK543AA-T3.6	RK543BA-T3.6
	RK543AA-T7.2	RK543BA-T7.2
	RK543AA-T10	RK543BA-T10
	RK543AA-T20	RK543BA-T20
	RK543AA-T30	RK543BA-T30
	RK564AAE-T3.6	RK564BAE-T3.6
	RK564AAE-T7.2	RK564BAE-T7.2
	RK564AAE-T10	RK564BAE-T10
	RK564AAE-T20	RK564BAE-T20
	RK564AAE-T30	RK564BAE-T30
	RK596AAE-T3.6	RK596BAE-T3.6
	RK596AAE-T7.2	RK596BAE-T7.2
RK596AAE-T10	RK596BAE-T10	
RK596AAE-T20	RK596BAE-T20	
RK596AAE-T30	RK596BAE-T30	
Single-Phase 200-230 VAC	RK564ACE-T3.6	RK564BCE-T3.6
	RK564ACE-T7.2	RK564BCE-T7.2
	RK564ACE-T10	RK564BCE-T10
	RK564ACE-T20	RK564BCE-T20
	RK564ACE-T30	RK564BCE-T30
	RK596ACE-T3.6	RK596BCE-T3.6
	RK596ACE-T7.2	RK596BCE-T7.2
	RK596ACE-T10	RK596BCE-T10
	RK596ACE-T20	RK596BCE-T20
	RK596ACE-T30	RK596BCE-T30

●PS Geared Type

Power Supply Voltage	Model (Single shaft)	Model (Double shaft)
Single-Phase 100-115 VAC	RK545AA-PS5	RK545BA-PS5
	RK545AA-PS7	RK545BA-PS7
	RK545AA-PS10	RK545BA-PS10
	RK543AA-PS25	RK543BA-PS25
	RK543AA-PS36	RK543BA-PS36
	RK543AA-PS50	RK543BA-PS50
	RK566AAE-PS5	RK566BAE-PS5
	RK566AAE-PS7	RK566BAE-PS7
	RK566AAE-PS10	RK566BAE-PS10
	RK564AAE-PS25	RK564BAE-PS25
	RK564AAE-PS36	RK564BAE-PS36
	RK564AAE-PS50	RK564BAE-PS50
	RK599AAE-PS5	RK599BAE-PS5
	RK599AAE-PS7	RK599BAE-PS7
	RK599AAE-PS10	RK599BAE-PS10
	RK596AAE-PS25	RK596BAE-PS25
	RK596AAE-PS36	RK596BAE-PS36
	RK596AAE-PS50	RK596BAE-PS50
Single-Phase 200-230 VAC	RK566ACE-PS5	RK566BCE-PS5
	RK566ACE-PS7	RK566BCE-PS7
	RK566ACE-PS10	RK566BCE-PS10
	RK564ACE-PS25	RK564BCE-PS25
	RK564ACE-PS36	RK564BCE-PS36
	RK564ACE-PS50	RK564BCE-PS50
	RK599ACE-PS5	RK599BCE-PS5
	RK599ACE-PS7	RK599BCE-PS7
	RK599ACE-PS10	RK599BCE-PS10
	RK596ACE-PS25	RK596BCE-PS25
	RK596ACE-PS36	RK596BCE-PS36
	RK596ACE-PS50	RK596BCE-PS50

●TH Geared Type with Encoder

Power Supply Voltage	Model	
Single-Phase 100-115 VAC	RK543AAR27T3.6	
	RK543AAR27T7.2	
	RK543AAR27T10	
	RK543AAR27T20	
	RK543AAR27T30	
	RK564AAER27T3.6	
	RK564AAER27T7.2	
	RK564AAER27T10	
	RK564AAER27T20	
	RK564AAER27T30	
	RK596AAER27T3.6	
	RK596AAER27T7.2	
	RK596AAER27T10	
	RK596AAER27T20	
	RK596AAER27T30	
	Single-Phase 200-230 VAC	RK564ACER27T3.6
		RK564ACER27T7.2
		RK564ACER27T10
RK564ACER27T20		
RK564ACER27T30		
RK596ACER27T3.6		
RK596ACER27T7.2		
RK596ACER27T10		
RK596ACER27T20		
RK596ACER27T30		

●PS Geared Type with Encoder

Power Supply Voltage	Model
Single-Phase 100-115 VAC	RK545AAR27PS5
	RK545AAR27PS7
	RK545AAR27PS10
	RK543AAR27PS25
	RK543AAR27PS36
	RK543AAR27PS50
	RK566AAER27PS5
	RK566AAER27PS7
	RK566AAER27PS10
	RK564AAER27PS25
	RK564AAER27PS36
	RK564AAER27PS50
	RK599AAER27PS5
	RK599AAER27PS7
	RK599AAER27PS10
	RK596AAER27PS25
	RK596AAER27PS36
	RK596AAER27PS50
Single-Phase 200-230 VAC	RK566ACER27PS5
	RK566ACER27PS7
	RK566ACER27PS10
	RK564ACER27PS25
	RK564ACER27PS36
	RK564ACER27PS50
	RK599ACER27PS5
	RK599ACER27PS7
	RK599ACER27PS10
	RK596ACER27PS25
	RK596ACER27PS36
	RK596ACER27PS50

Introduction	AC Input Motor & Driver
AR	0.36° / Geared / C-STEP
AS	0.72° / Geared / C-STEP
RK	0.72° / Geared / RK
UMK	0.9°/1.8° / Geared / UMK
AR	0.36° / Geared / C-STEP
ASX	0.36° / Geared / C-STEP
CRK	0.36°/0.72° / Geared / CRK
CMK	0.9°/1.8° / Geared / CMK
RBK	1.8° / Geared / RBK
PK	0.36° / PK
PK	0.72° / PK
PK	0.9° / PK
PK/PV	1.8° / PK/PV
PK	Geared / PK
SCX10 / EMP400 / SG8030J	Controllers
	Accessories

● PN Geared Type

Power Supply Voltage	Model (Single shaft)	Model (Double shaft)
Single-Phase 100-115 VAC	RK544AA-N5	RK544BA-N5
	RK544AA-N7.2	RK544BA-N7.2
	RK544AA-N10	RK544BA-N10
	RK566AAE-N5	RK566BAE-N5
	RK566AAE-N7.2	RK566BAE-N7.2
	RK566AAE-N10	RK566BAE-N10
	RK564AAE-N25	RK564BAE-N25
	RK564AAE-N36	RK564BAE-N36
	RK564AAE-N50	RK564BAE-N50
	RK599AAE-N5	RK599BAE-N5
	RK599AAE-N7.2	RK599BAE-N7.2
	RK599AAE-N10	RK599BAE-N10
	RK596AAE-N25	RK596BAE-N25
	RK596AAE-N36	RK596BAE-N36
	RK596AAE-N50	RK596BAE-N50
Single-Phase 200-230 VAC	RK566ACE-N5	RK566BCE-N5
	RK566ACE-N7.2	RK566BCE-N7.2
	RK566ACE-N10	RK566BCE-N10
	RK564ACE-N25	RK564BCE-N25
	RK564ACE-N36	RK564BCE-N36
	RK564ACE-N50	RK564BCE-N50
	RK599ACE-N5	RK599BCE-N5
	RK599ACE-N7.2	RK599BCE-N7.2
	RK599ACE-N10	RK599BCE-N10
	RK596ACE-N25	RK596BCE-N25
	RK596ACE-N36	RK596BCE-N36
	RK596ACE-N50	RK596BCE-N50

● Harmonic Geared Type

Power Supply Voltage	Model (Single shaft)	Model (Double shaft)
Single-Phase 100-115 VAC	RK543AA-H50	RK543BA-H50
	RK543AA-H100	RK543BA-H100
	RK564AAE-H50	RK564BAE-H50
	RK564AAE-H100	RK564BAE-H100
	RK596AAE-H50	RK596BAE-H50
Single-Phase 200-230 VAC	RK564ACE-H50	RK564BCE-H50
	RK564ACE-H100	RK564BCE-H100
	RK596ACE-H50	RK596BCE-H50
	RK596ACE-H100	RK596BCE-H100

● Harmonic Geared Type with Encoder

Power Supply Voltage	Model
Single-Phase 100-115 VAC	RK543AAR27H50
	RK543AAR27H100
	RK564AAER27H50
	RK564AAER27H100
Single-Phase 200-230 VAC	RK596AAER27H50
	RK596AAER27H100
	RK564ACER27H50
	RK564ACER27H100
	RK596ACER27H50
	RK596ACER27H100

Step Angle 0.72° Motor Frame Size 60 mm (2.36 in.), 85 mm (3.35 in.)

Standard Type

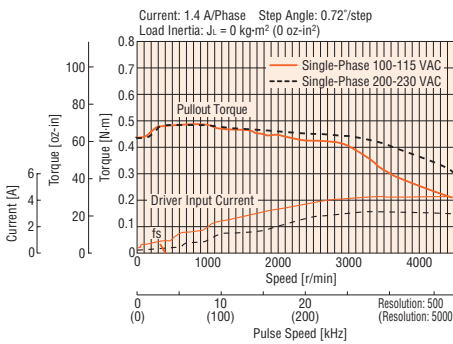
Specifications RoHS



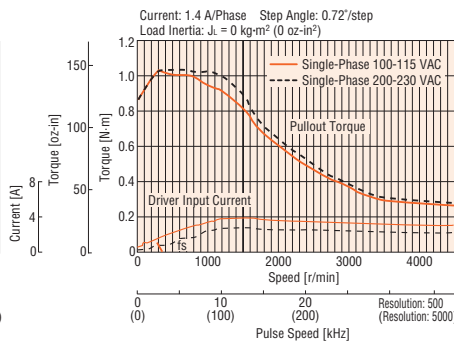
Model	Single-Phase 100-115 VAC	Single Shaft	RK564AAE	RK566AAE	RK569AAE	RK596AAE	RK599AAE	RK5913AAE
		Double Shaft	RK564BAE	RK566BAE	RK569BAE	RK596BAE	RK599BAE	RK5913BAE
		With Encoder	RK564AAE-R27	RK566AAE-R27	RK569AAE-R27	RK596AAE-R27	RK599AAE-R27	RK5913AAE-R27
Model	Single-Phase 200-230 VAC	Single Shaft	RK564ACE	RK566ACE	RK569ACE	RK596ACE	RK599ACE	RK5913ACE
		Double Shaft	RK564BCE	RK566BCE	RK569BCE	RK596BCE	RK599BCE	RK5913BCE
		With Encoder	RK564ACE-R27	RK566ACE-R27	RK569ACE-R27	RK596ACE-R27	RK599ACE-R27	RK5913ACE-R27
Maximum Holding Torque		N·m (oz·in)	0.42 (59)	0.83 (117)	1.66 (230)	2.1 (290)	4.1 (580)	6.3 (890)
Holding Torque at Motor Standstill	Power ON	N·m (oz·in)	0.21 (29)	0.41 (58)	0.83 (117)	1.05 (149)	2.05 (290)	3.15 (440)
Rotor Inertia		J: kg·m ² (oz·in ²)	175×10 ⁻⁷ (0.96)	280×10 ⁻⁷ (1.53)	560×10 ⁻⁷ (3.1)	1400×10 ⁻⁷ (7.7)	2700×10 ⁻⁷ (14.8)	4000×10 ⁻⁷ (22)
Rated Current		A/Phase	1.4					
Basic Step Angle			0.72°					
Power Source			Single-Phase 100-115 VAC ±15%		50/60 Hz	4.5 A		
			Single-Phase 200-230 VAC ±15%		50/60 Hz	3.5 A		
Excitation Mode			Microstep					

Speed – Torque Characteristics

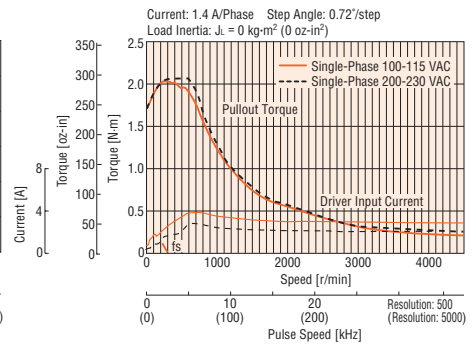
RK564



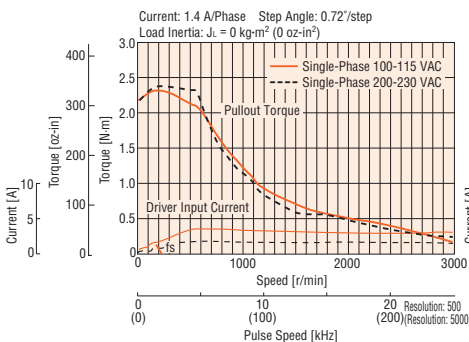
RK566



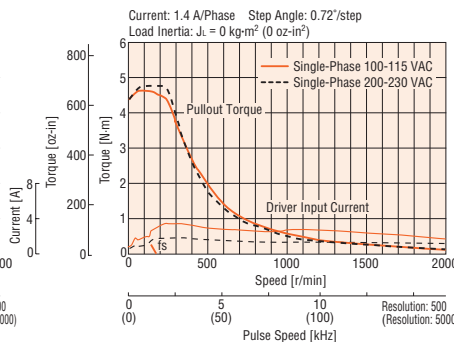
RK569



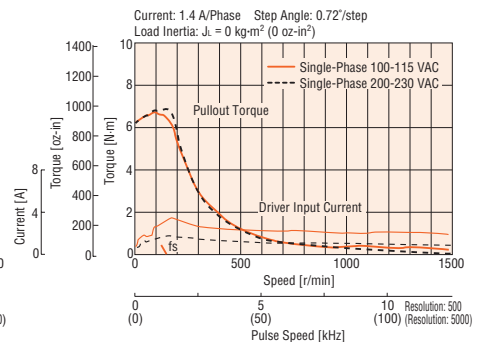
RK596



RK599



RK5913



● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F).
[Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

Step Angle 0.72° Motor Frame Size 60 mm (2.36 in.), 85 mm (3.35 in.)

Standard Type Terminal Box

Specifications (RoHS)

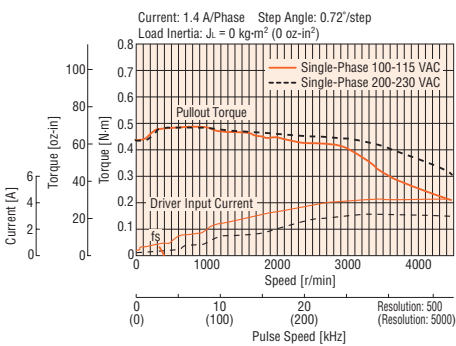


Model	Single-Phase 100-115 VAC Single-Phase 200-230 VAC	RK564AAT RK564ACT	RK566AAT RK566ACT	RK569AAT RK569ACT	RK596AAT RK596ACT	RK599AAT RK599ACT	RK5913AAT RK5913ACT
Maximum Holding Torque	N·m (oz·in)	0.42 (59)	0.83 (117)	1.66 (230)	2.1 (290)	4.1 (580)	6.3 (890)
Holding Torque at Motor Standstill	Power ON N·m (oz·in)	0.21 (29)	0.41 (58)	0.83 (117)	1.05 (149)	2.05 (290)	3.15 (440)
Rotor Inertia	J: kg·m ² (oz·in ²)	175×10 ⁻⁷ (0.96)	280×10 ⁻⁷ (1.53)	560×10 ⁻⁷ (3.1)	1400×10 ⁻⁷ (7.7)	2700×10 ⁻⁷ (14.8)	4000×10 ⁻⁷ (22)
Rated Current	A/Phase	1.4					
Basic Step Angle		0.72°					
Power Source		Single-Phase 100-115 VAC ±15%		50/60 Hz	4.5 A		
		Single-Phase 200-230 VAC		+10% -15%	50/60 Hz	3.5 A	
Excitation Mode		Microstep					
Degree of Protection		Motor: IP65* Driver: IP10					

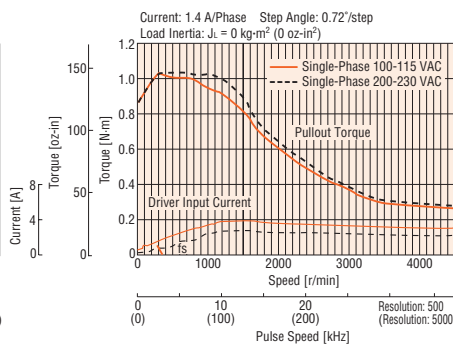
*Excluding the gap between the shaft and the flange

Speed – Torque Characteristics

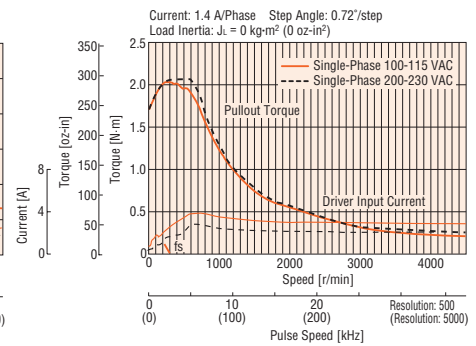
RK564



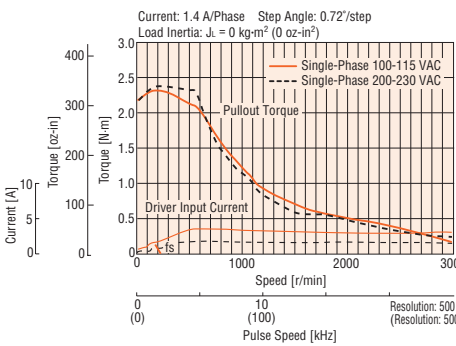
RK566



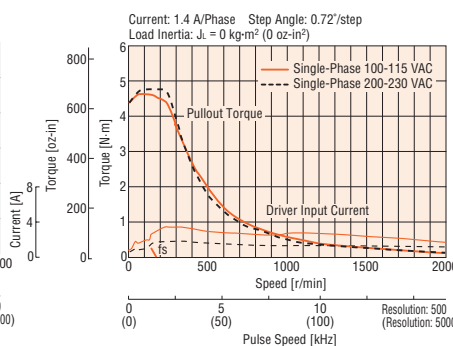
RK569



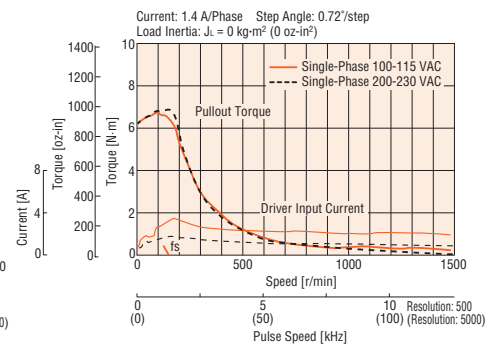
RK596



RK599



RK5913




● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

TH Geared Type Motor Frame Size 42 mm (1.65 in.)

Specifications RoHS

 With the **RK543** type, only the driver conforms to the CSA Standards.

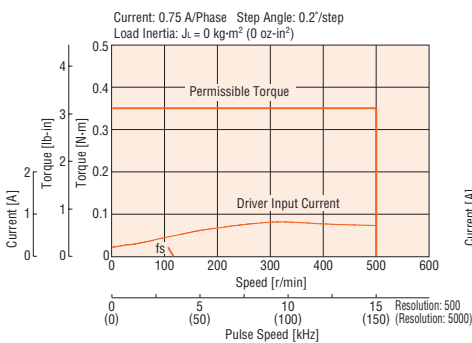
Model	Single-Phase 100-115 VAC	Single Shaft	RK543AA-T3.6	RK543AA-T7.2	RK543AA-T10	RK543AA-T20	RK543AA-T30
		Double Shaft	RK543BA-T3.6	RK543BA-T7.2	RK543BA-T10	RK543BA-T20	RK543BA-T30
		With Encoder	RK543AAR27T3.6	RK543AAR27T7.2	RK543AAR27T10	RK543AAR27T20	RK543AAR27T30
Maximum Holding Torque		N·m (lb·in)	0.35 (3)	0.7 (6.1)	1 (8.8)	1.5 (13.2)	
Rotor Inertia		J: kg·m ² (oz·in ²)	35×10 ⁻⁷ (0.191)				
Rated Current		A/Phase	0.75				
Basic Step Angle			0.2°	0.1°	0.072°	0.036°	0.024°
Gear Ratio			3.6	7.2	10	20	30
Permissible Torque		N·m (lb·in)	0.35 (3)	0.7 (6.1)	1 (8.8)	15 (13.2)	
Holding Torque at Motor Standstill	Power ON	N·m (lb·in)	0.23 (2)	0.46 (4)	0.65 (5.7)	1.3 (11.5)	1.5 (13.2)
Backlash		arc min (degrees)	45 (0.75)	25 (0.42)		15 (0.25)	
Permissible Speed Range		r/min	0~500	0~250	0~180	0~90	0~60
Power Source			Single-Phase 100-115 VAC±15% 50/60 Hz 1 A				
Excitation Mode			Microstep				

Note

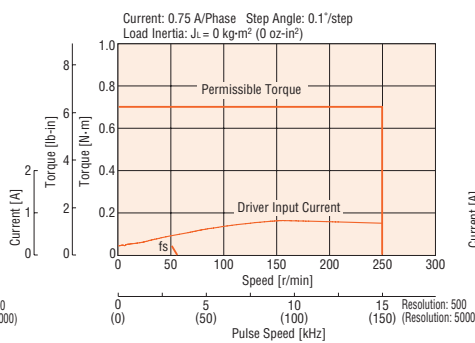
● Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 3.6, 7.2 and 10. It is opposite for 20 and 30 gear ratios.

Speed – Torque Characteristics

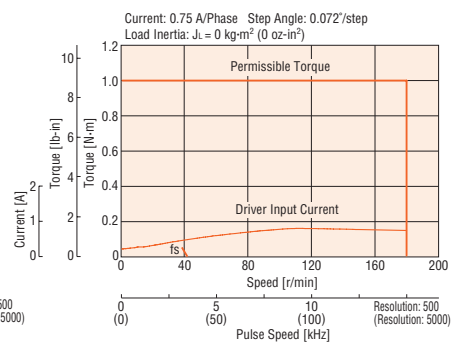
RK543 Gear Ratio 3.6



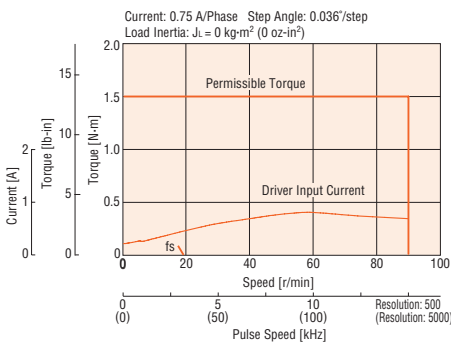
RK543 Gear Ratio 7.2



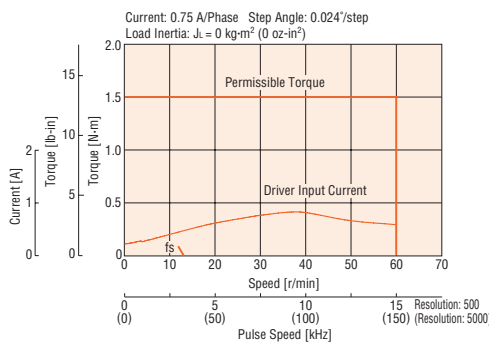
RK543 Gear Ratio 10



RK543 Gear Ratio 20



RK543 Gear Ratio 30



● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

TH Geared Type Motor Frame Size 90 mm (3.54 in.)

Specifications RoHS



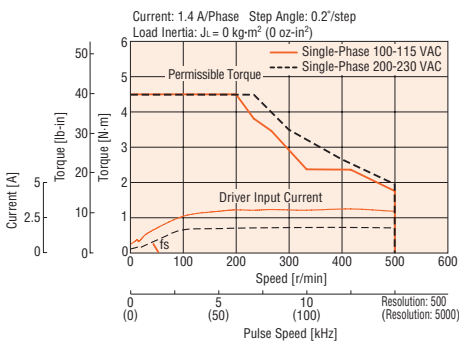
Model	Single-Phase 100-115 VAC		RK596AAE-T3.6	RK596AAE-T7.2	RK596AAE-T10	RK596AAE-T20	RK596AAE-T30	
	Single-Phase 200-230 VAC		RK596ACE-T3.6	RK596ACE-T7.2	RK596ACE-T10	RK596ACE-T20	RK596ACE-T30	
	With Encoder		RK596AAER27T3.6	RK596AAER27T7.2	RK596AAER27T10	RK596AAER27T20	RK596AAER27T30	
Maximum Holding Torque	N·m (lb·in)		4.5 (39)		9 (79)		12 (106)	
Rotor Inertia	J: kg·m ² (oz·in ²)		1400×10 ⁻⁷ (7.7)					
Rated Current	A/Phase		1.4					
Basic Step Angle			0.2°	0.1°	0.072°	0.036°	0.024°	
Gear Ratio			3.6	7.2	10	20	30	
Permissible Torque	N·m (lb·in)		4.5 (39)		9 (79)		12 (106)	
Holding Torque at Motor Standstill	Power ON	N·m (lb·in)	3.7 (32)	7.5 (66)	9 (79)	12 (106)		
Backlash	arc min (degrees)		25 (0.42)		15 (0.25)		10 (0.17)	
Permissible Speed Range	r/min		0~500	0~250	0~180	0~90	0~60	
Power Source			Single-Phase 100-115 VAC ±15%		50/60 Hz	4.5 A	Single-Phase 200-230 VAC ±10% -15%	
Excitation Mode			Microstep					

Note

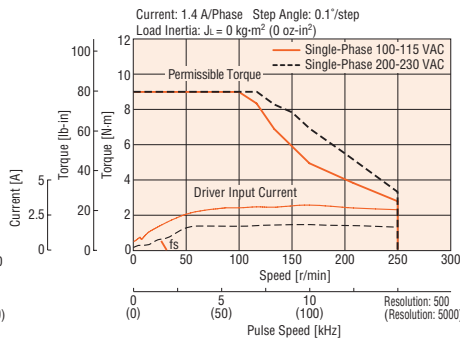
● Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 3.6, 7.2 and 10. It is opposite for 20 and 30 gear ratios.

Speed – Torque Characteristics

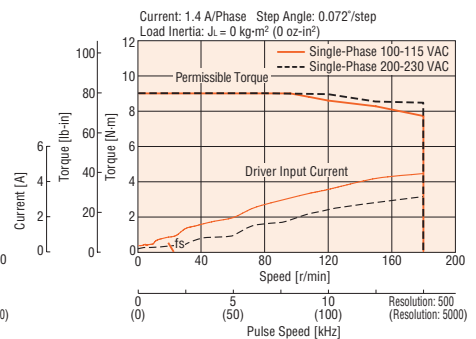
RK596 Gear Ratio 3.6



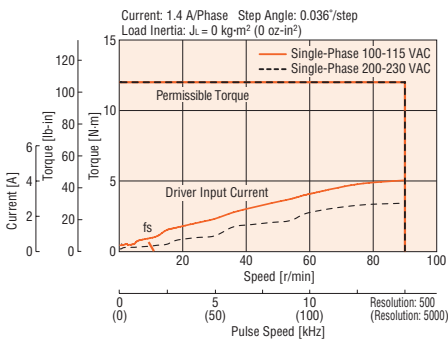
RK596 Gear Ratio 7.2



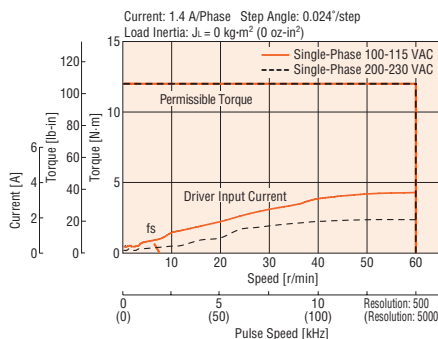
RK596 Gear Ratio 10



RK596 Gear Ratio 20



RK596 Gear Ratio 30




● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

PS Geared Type Motor Frame Size 42 mm (1.65 in.)

Specifications RoHS

 With the **RK54** type, only the driver conforms to the CSA Standards.

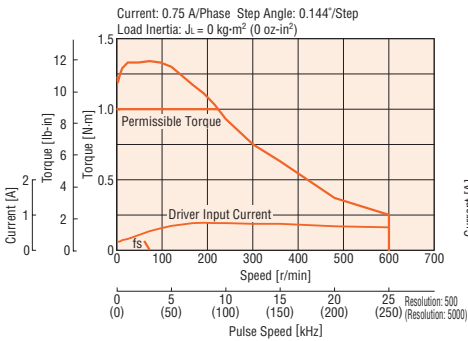
Model	Single-Phase 100-115 VAC	Single Shaft	RK545AA-PS5	RK545AA-PS7	RK545AA-PS10	RK543AA-PS25	RK543AA-PS36	RK543AA-PS50	
		Double Shaft	RK545BA-PS5	RK545BA-PS7	RK545BA-PS10	RK543BA-PS25	RK543BA-PS36	RK543BA-PS50	
		With Encoder	RK545AAR27PS5	RK545AAR27PS7	RK545AAR27PS10	RK543AAR27PS25	RK543AAR27PS36	RK543AAR27PS50	
Maximum Holding Torque	N·m (lb·in)	1 (8.8)		1.5 (13.2)		2.5 (22)		3 (26)	
Rotor Inertia	J: kg·m ² (oz·in ²)			68×10 ⁻⁷ (0.37)		35×10 ⁻⁷ (0.191)			
Rated Current	A/Phase							0.75	
Basic Step Angle		0.144°	0.1°	0.072°	0.0288°	0.02°	0.0144°		
Gear Ratio		5	7.2	10	25	36	50		
Permissible Torque	N·m (lb·in)	1 (8.8)		1.5 (13.2)		2.5 (22)		3 (26)	
Maximum Torque	N·m (lb·in)	1.5 (13.2)		2 (17.7)		6 (53)			
Holding Torque at Motor Standstill	Power ON N·m (lb·in)	0.6 (5.3)		0.86 (7.6)		1.2 (10.6)		1.6 (14.1) 2.3 (20) 3 (26)	
Backlash	arc min (degrees)	25 (0.42)							
Permissible Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60		
Power Source		Single-Phase 100-115 VAC ±15%							
Excitation Mode		Microstep							

Note

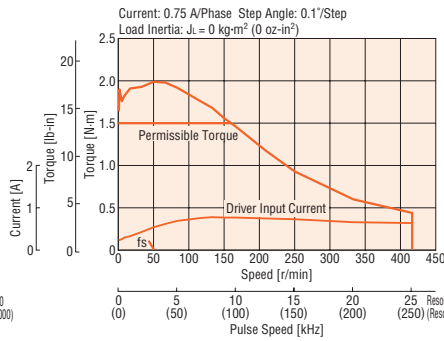
● Direction of rotation of the motor shaft and that of the gear output shaft are the same.

Speed – Torque Characteristics

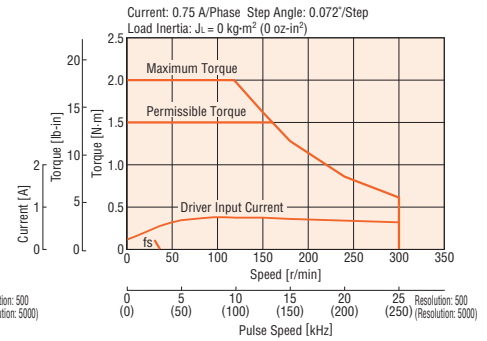
RK545 Gear Ratio 5



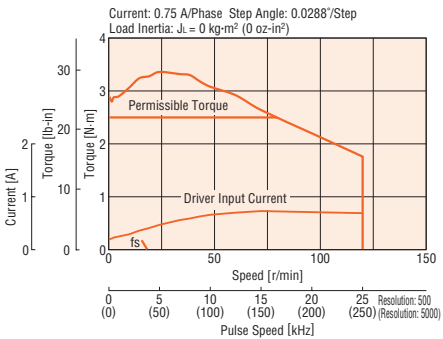
RK545 Gear Ratio 7.2



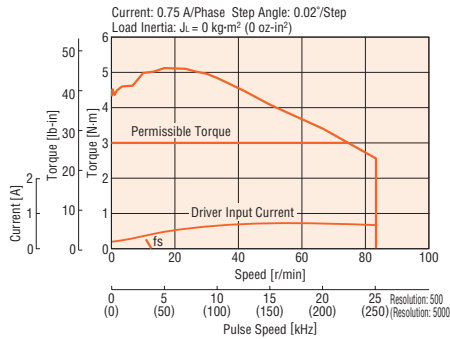
RK545 Gear Ratio 10



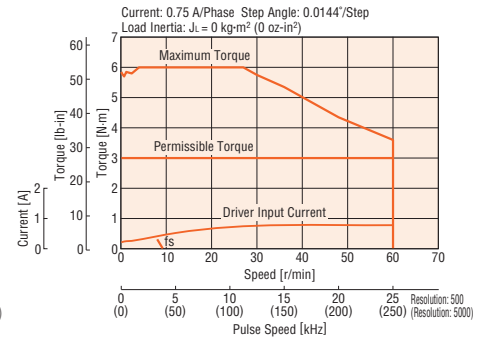
RK543 Gear Ratio 25



RK543 Gear Ratio 36



RK543 Gear Ratio 50



● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

PS Geared Type Motor Frame Size 60 mm (2.36 in.)

Specifications RoHS



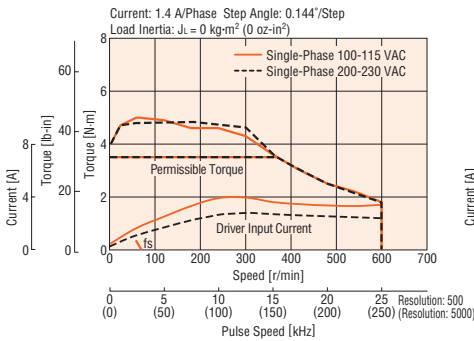
Model	Single-Phase 100-115 VAC		RK566AAE-PS5	RK566AAE-PS7	RK566AAE-PS10	RK564AAE-PS25	RK564AAE-PS36	RK564AAE-PS50
	Single Shaft	Double Shaft	RK566BAE-PS5	RK566BAE-PS7	RK566BAE-PS10	RK564BAE-PS25	RK564BAE-PS36	RK564BAE-PS50
Single-Phase 200-230 VAC	With Encoder		RK566AAER27PS5	RK566AAER27PS7	RK566AAER27PS10	RK564AAER27PS25	RK564AAER27PS36	RK564AAER27PS50
	Single Shaft	Double Shaft	RK566ACE-PS5	RK566ACE-PS7	RK566ACE-PS10	RK564ACE-PS25	RK564ACE-PS36	RK564ACE-PS50
	Single Shaft	Double Shaft	RK566BCE-PS5	RK566BCE-PS7	RK566BCE-PS10	RK564BCE-PS25	RK564BCE-PS36	RK564BCE-PS50
		With Encoder	RK566ACER27PS5	RK566ACER27PS7	RK566ACER27PS10	RK564ACER27PS25	RK564ACER27PS36	RK564ACER27PS50
Maximum Holding Torque	N·m (lb-in)		3.5 (30)	4 (35)	5 (44)	8 (70)		
Rotor Inertia	J: kg·m ² (oz-in ²)		280×10 ⁻⁷ (1.53)			175×10 ⁻⁷ (0.96)		
Rated Current	A/Phase		1.4					
Basic Step Angle			0.144°	0.1°	0.072°	0.0288°	0.02°	0.0144°
Gear Ratio			5	7.2	10	25	36	50
Permissible Torque	N·m (lb-in)		3.5 (30)	4 (35)	5 (44)	8 (70)		
Maximum Torque	N·m (lb-in)		7 (61)	9 (79)	11 (97)	16 (141)	20 (177)	
Holding Torque at Motor Standstill	Power ON	N·m (lb-in)	2 (17.7)	2.9 (25)	4.1 (36)	5.2 (46)	7.5 (66)	8 (70)
Backlash	arc min (degrees)		15 (0.25)					
Permissible Speed Range	r/min		0~600	0~416	0~300	0~120	0~83	0~60
Power Source			Single-Phase 100-115 VAC ±15%			50/60 Hz	4.5 A	
			Single-Phase 200-230 VAC ±15%			50/60 Hz	3.5 A	
Excitation Mode			Microstep					

Note

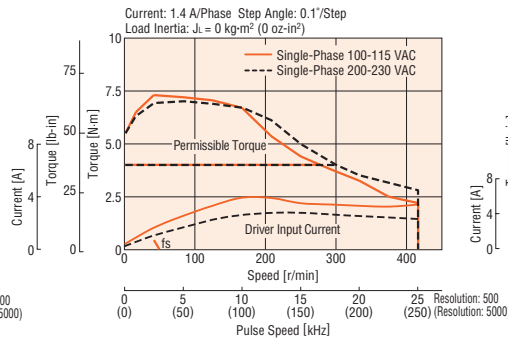
● Direction of rotation of the motor shaft and that of the gear output shaft are the same.

Speed – Torque Characteristics

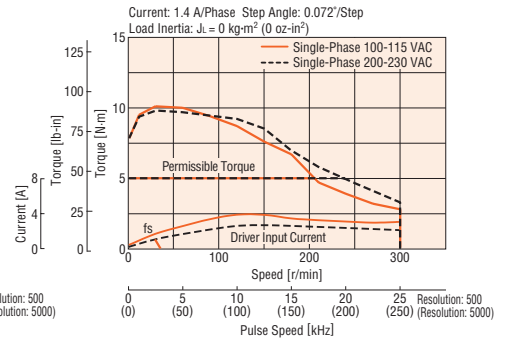
RK566 Gear Ratio 5



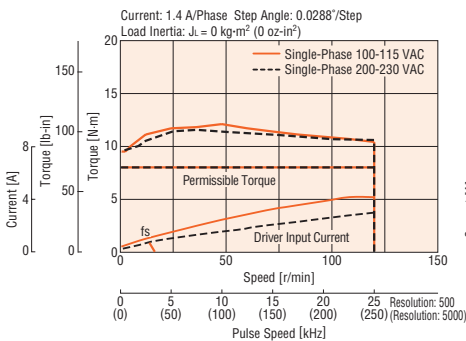
RK566 Gear Ratio 7.2



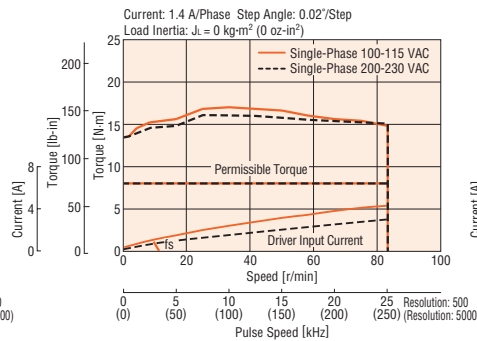
RK566 Gear Ratio 10



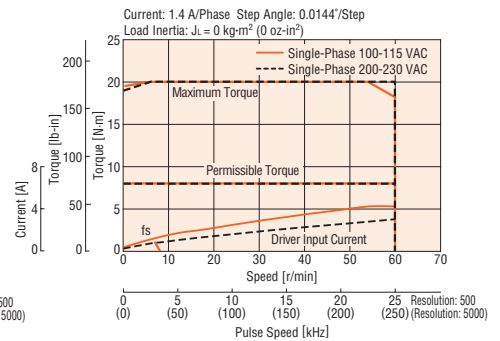
RK564 Gear Ratio 25



RK564 Gear Ratio 36



RK564 Gear Ratio 50



● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F).
[Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

PS Geared Type Motor Frame Size 90 mm (3.54 in.)

Specifications RoHS



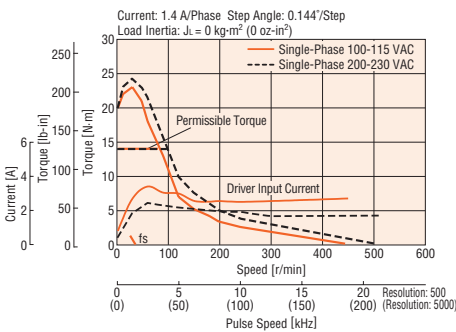
Model	Single-Phase 100-115 VAC		RK599AAE-PS5	RK599AAE-PS7	RK599AAE-PS10	RK596AAE-PS25	RK596AAE-PS36	RK596AAE-PS50
	Double Shaft		RK599BAE-PS5	RK599BAE-PS7	RK599BAE-PS10	RK596BAE-PS25	RK596BAE-PS36	RK596BAE-PS50
	With Encoder		RK599AAER27PS5	RK599AAER27PS7	RK599AAER27PS10	RK596AAER27PS25	RK596AAER27PS36	RK596AAER27PS50
Model	Single-Phase 200-230 VAC		RK599ACE-PS5	RK599ACE-PS7	RK599ACE-PS10	RK596ACE-PS25	RK596ACE-PS36	RK596ACE-PS50
	Double Shaft		RK599BCE-PS5	RK599BCE-PS7	RK599BCE-PS10	RK596BCE-PS25	RK596BCE-PS36	RK596BCE-PS50
	With Encoder		RK599ACER27PS5	RK599ACER27PS7	RK599ACER27PS10	RK596ACER27PS25	RK596ACER27PS36	RK596ACER27PS50
Maximum Holding Torque	N·m (lb·in)		14 (123)	20 (177)		37 (320)		
Rotor Inertia	J: kg·m ² (oz·in ²)		2700×10 ⁻⁷ (14.8)			1400×10 ⁻⁷ (7.7)		
Rated Current	A/Phase		1.4					
Basic Step Angle			0.144°	0.1°	0.072°	0.0288°	0.02°	0.0144°
Gear Ratio			5	7.2	10	25	36	50
Permissible Torque	N·m (lb·in)		14 (123)	20 (177)		37 (320)		
Maximum Torque	N·m (lb·in)		28 (240)	35 (300)		56 (490)	60 (530)	
Holding Torque at Motor Standstill	Power ON	N·m (lb·in)	10 (88)	14 (123)	20 (177)	26 (230)	37 (320)	
Backlash	arc min (degrees)		15 (0.25)					
Permissible Speed Range	r/min		0~600	0~416	0~300	0~120	0~83	0~60
Power Source			Single-Phase 100-115 VAC ± 15%			50/60 Hz	4.5 A	
			Single-Phase 200-230 VAC ± 10%			50/60 Hz	3.5 A	
Excitation Mode			Microstep					

Note

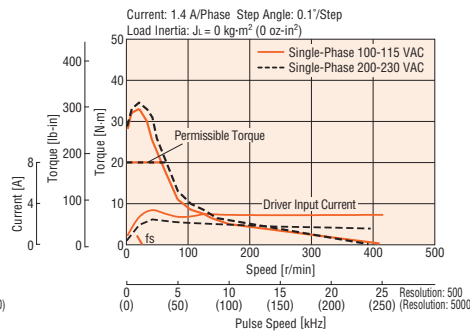
- Direction of rotation of the motor shaft and that of the gear output shaft are the same.

Speed – Torque Characteristics

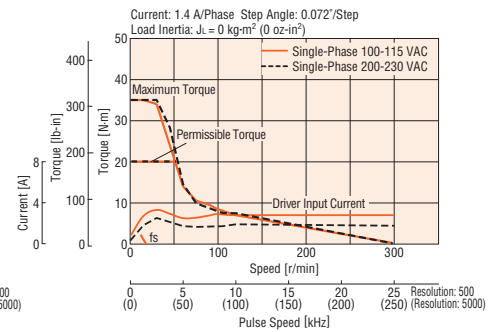
RK599 Gear Ratio 5



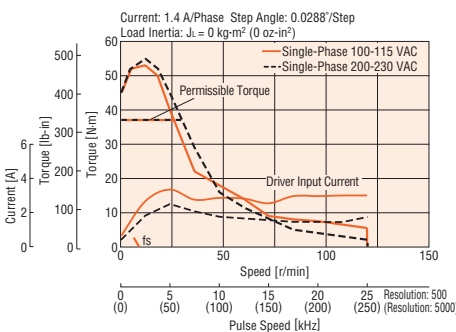
RK599 Gear Ratio 7.2



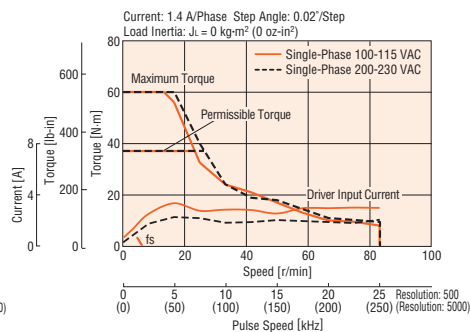
RK599 Gear Ratio 10



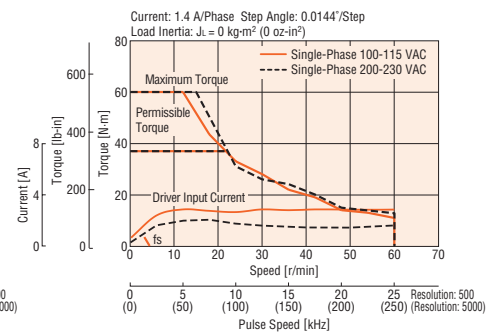
RK596 Gear Ratio 25



RK596 Gear Ratio 36



RK596 Gear Ratio 50



- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.


Note

- Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

Introduction
 AC Input Motor & Driver
 0.36° / Geared / Geared
 0.72° / Geared / Geared
 0.9° / 1.8° / Geared / Geared
 0.36° / Geared / Geared
 0.36° / Geared / Geared
 0.36° / Geared / Geared
 0.9° / 1.8° / Geared / Geared
 1.8° / Geared / Geared
 0.36° / Geared / Geared
 0.72° / Geared / Geared
 0.9° / Geared / Geared
 1.8° / Geared / Geared
 Geared / Geared
 Controllers / SCX10 / EMP400 / 5G8030J
 Accessories

PN Geared Type Motor Frame Size 42 mm (1.65 in.)

Specifications RoHS

 With the **RK544** type, only the driver conforms to the CSA Standards.

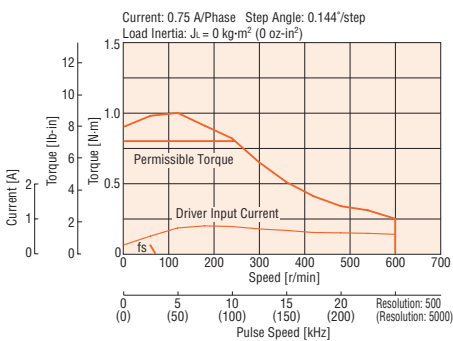
Model	Single-Phase 100-115 VAC	Single Shaft	RK544AA-N5	RK544AA-N7.2	RK544AA-N10
		Double Shaft	RK544BA-N5	RK544BA-N7.2	RK544BA-N10
Maximum Holding Torque		N·m (lb·in)	0.8 (7)	1.2 (10.6)	1.5 (13.2)
Rotor Inertia		J: kg·m ² (oz·in ²)		54 × 10 ⁻⁷ (0.30)	
Rated Current		A/Phase		0.75	
Basic Step Angle			0.144°	0.1°	0.072°
Gear Ratio			5	7.2	10
Permissible Torque		N·m (lb·in)	0.8 (7)	1.2 (10.6)	1.5 (13.2)
Maximum Torque		N·m (lb·in)	1.5 (13.2)	2 (17.7)	2 (17.7)
Holding Torque at Motor Standstill	Power ON	N·m (lb·in)	0.45 (3.9)	0.64 (5.6)	0.9 (7.9)
Backlash		arc min (degrees)		2 (0.034)	
Permissible Speed Range		r/min	0~600	0~416	0~300
Power Source			Single-Phase 100-115 VAC ± 15% 50/60 Hz 1 A		
Excitation Mode			Microstep		

Note

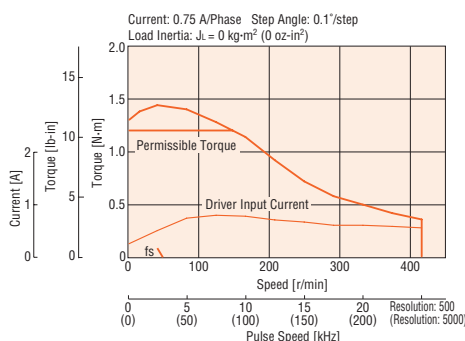
● Direction of rotation of the motor shaft and that of the gear output shaft are the same.

Speed – Torque Characteristics

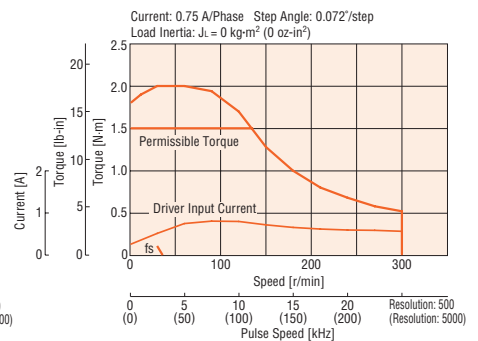
RK544 Gear Ratio 5



RK544 Gear Ratio 7.2



RK544 Gear Ratio 10



● The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F).
[Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

PN Geared Type Motor Frame Size 90 mm (3.54 in.)

Specifications RoHS



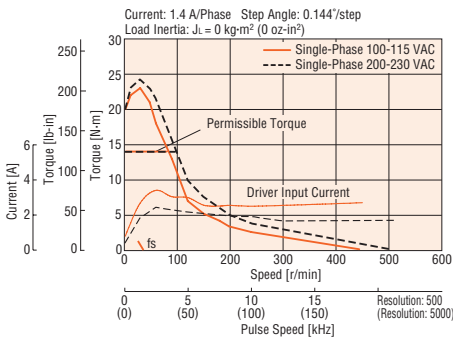
Model	Single-Phase 100-115 VAC	Single Shaft	RK599AAE-N5	RK599AAE-N7.2	RK599AAE-N10	RK596AAE-N25	RK596AAE-N36	RK596AAE-N50	
		Double Shaft	RK599BAE-N5	RK599BAE-N7.2	RK599BAE-N10	RK596BAE-N25	RK596BAE-N36	RK596BAE-N50	
	Single-Phase 200-230 VAC	Single Shaft	RK599ACE-N5	RK599ACE-N7.2	RK599ACE-N10	RK596ACE-N25	RK596ACE-N36	RK596ACE-N50	
	Double Shaft	RK599BCE-N5	RK599BCE-N7.2	RK599BCE-N10	RK596BCE-N25	RK596BCE-N36	RK596BCE-N50		
Maximum Holding Torque	N·m (lb·in)		14 (123)		20 (177)		37 (320)		
Rotor Inertia	J: kg·m ² (oz·in ²)		2700×10 ⁻⁷ (14.8)			1400×10 ⁻⁷ (7.7)			
Rated Current	A/Phase		1.4						
Basic Step Angle			0.144°	0.1°	0.072°	0.0288°	0.02°	0.0144°	
Gear Ratio			5	7.2	10	25	36	50	
Permissible Torque	N·m (lb·in)		14 (123)		20 (177)		37 (320)		
Maximum Torque	N·m (lb·in)		28 (240)		35 (300)		56 (490)		60 (530)
Holding Torque at Motor Standstill	Power ON	N·m (lb·in)	10 (88)	14 (123)	20 (177)	26 (230)	37 (320)		
Backlash	arc min (degrees)		2 (0.034)			3 (0.05)			
Permissible Speed Range	r/min		0~600	0~416	0~300	0~120	0~83	0~60	
Power Source			Single-Phase 100-115 VAC ±15%		50/60 Hz	4.5 A	Single-Phase 200-230 VAC ±10% 50/60 Hz 3.5 A		
Excitation Mode			Microstep						

Note

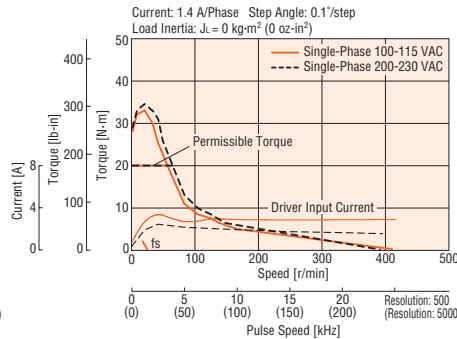
- Direction of rotation of the motor shaft and that of the gear output shaft are the same.

Speed – Torque Characteristics

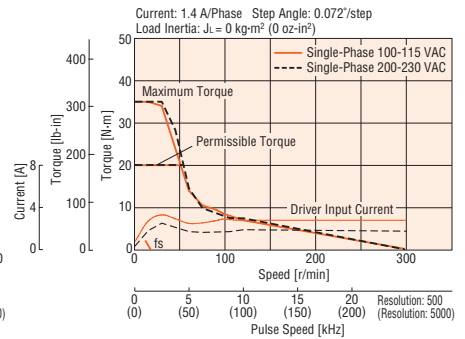
RK599 Gear Ratio 5



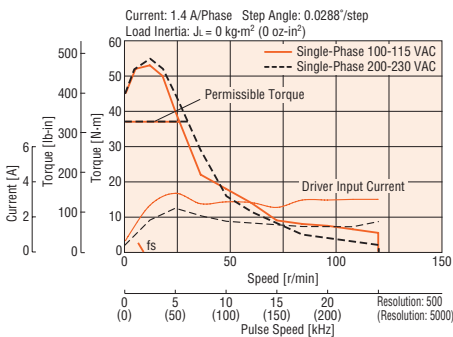
RK599 Gear Ratio 7.2



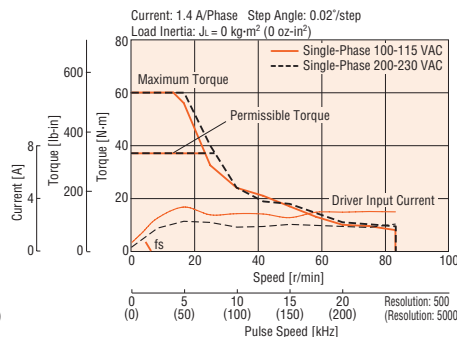
RK599 Gear Ratio 10



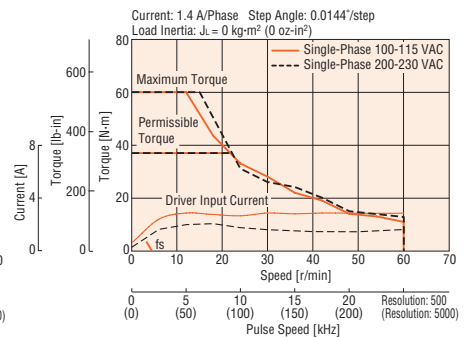
RK596 Gear Ratio 25



RK596 Gear Ratio 36



RK596 Gear Ratio 50



- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Note

- Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]

Harmonic Geared Type Motor Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.), 90 mm (3.54 in.)

Specifications (RoHS)

● With the **RK543** type, only the driver conforms to the CSA Standards.

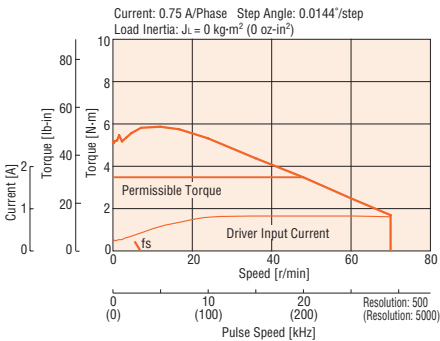
Model	Single Shaft		RK543AA-H50	RK543AA-H100	RK564AAE-H50	RK564AAE-H100	RK596AAE-H50	RK596AAE-H100
	Double Shaft		RK543BA-H50	RK543BA-H100	RK564BAE-H50	RK564BAE-H100	RK596BAE-H50	RK596BAE-H100
Single-Phase 100-115 VAC	With Encoder		RK543AAR27H50	RK543AAR27H100	RK564AAER27H50	RK564AAER27H100	RK596AAER27H50	RK596AAER27H100
	Single Shaft		—	—	RK564ACE-H50	RK564ACE-H100	RK596ACE-H50	RK596ACE-H100
Single-Phase 200-230 VAC	Double Shaft		—	—	RK564BCE-H50	RK564BCE-H100	RK596BCE-H50	RK596BCE-H100
	With Encoder		—	—	RK564ACER27H50	RK564ACER27H100	RK596ACER27H50	RK596ACER27H100
Maximum Holding Torque	N·m (lb-in)		3.5 (30)	5 (44)	5.5 (48)	8 (70)	25 (220)	37 (320)
Rotor Inertia	J: kg·m ² (oz-in ²)		52 × 10 ⁻⁷ (0.28)		210 × 10 ⁻⁷ (1.15)		1600 × 10 ⁻⁷ (8.8)	
Rated Current	A/Phase		0.75		1.4		1.4	
Basic Step Angle			0.0144°	0.0072°	0.0144°	0.0072°	0.0144°	0.0072°
Gear Ratio			50	100	50	100	50	100
Permissible Torque	N·m (lb-in)		3.5 (30)	5 (44)	5.5 (48)	8 (70)	25 (220)	37 (320)
Maximum Torque	N·m (lb-in)		8.3 (73)	11 (97)	18 (158)	28 (240)	35 (300)	55 (480)
Holding Torque at Motor Standstill	Power ON	N·m (lb-in)	3.2 (28)	5 (44)	5.5 (48)	8 (70)	25 (220)	37 (320)
Lost Motion (Load Torque)	arc min (degrees)		1.5 max. (±0.16 N·m)	1.5 max. (±0.2 N·m)	0.7 max. (±0.28 N·m)	0.7 max. (±0.39 N·m)	1.5 max. (±1.2 N·m)	
Permissible Speed Range	r/min		0~70	0~35	0~70	0~35	0~70	0~35
Power Source			Single-Phase 100-115 VAC ±15% 50/60 Hz 1 A		Single-Phase 100-115 VAC ±15% 50/60 Hz 4.5 A		Single-Phase 200-230 VAC ±10% -15% 50/60 Hz 3.5 A	
Excitation Mode			Microstep					

Notes

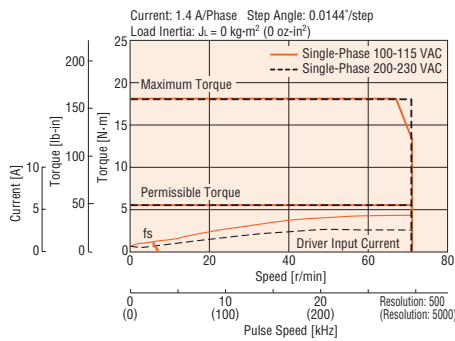
- The inertia represents a sum of the inertia of the harmonic gear converted to a motor shaft value, and the rotor inertia.
- Direction of rotation of the motor and that of the gear output shaft are the opposite.

Speed – Torque Characteristics

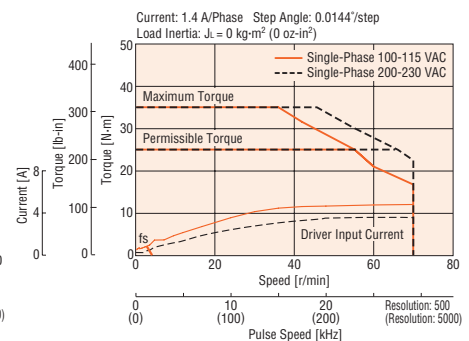
RK543 Gear Ratio 50



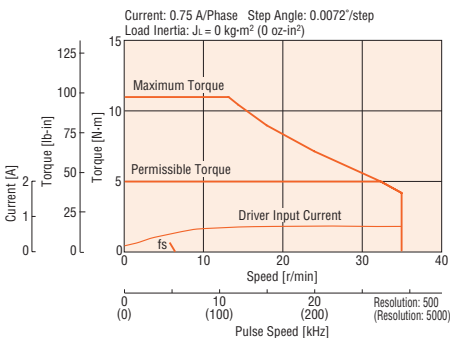
RK564 Gear Ratio 50



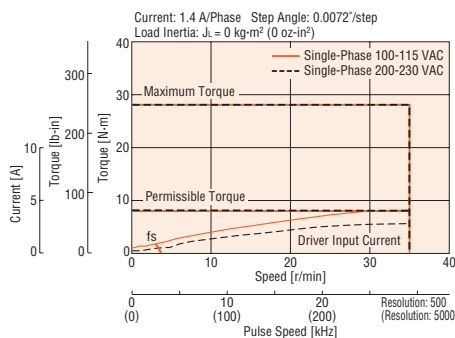
RK596 Gear Ratio 50



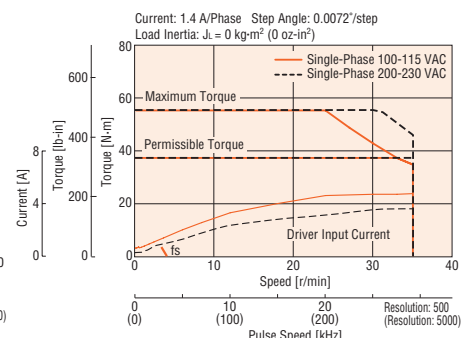
RK543 Gear Ratio 100



RK564 Gear Ratio 100



RK596 Gear Ratio 100



- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes

- Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C (212°F). [Under 75°C (167°F) is required to comply with UL or CSA Standards as the motor is recognized as thermal class 105 (A).]
- In order to prevent degradation of the gear grease in the harmonic gear, keep the temperature of the gear case under 70°C (158°F).

Driver Specifications

Input Signals	Input Mode	Photocoupler input, Input resistance: 220 Ω; Input current: 10~20 mA Photocoupler ON: +4.5~5 V, Photocoupler OFF: 0~+1 V (Voltage between terminals)
	Pulse Signal (CW Pulse Signal)	Operation command pulse signal (CW direction operation command pulse signal when in 2-pulse input mode), Negative logic pulse input Pulse width: 2.5 μs minimum, Pulse rise/fall: 2 μs maximum, Pulse duty: 50% and below Motor moves one step when the pulse input is switched from photocoupler ON to OFF. Maximum input pulse frequency: 200 kHz (When the pulse duty is 50%)
	Rotation Direction Signal (CCW Pulse Signal)	Rotation direction signal, Photocoupler ON: CW, Photocoupler OFF: CCW (CCW direction operation command pulse signal when in 2-pulse input mode), Negative logic pulse input Pulse width: 2.5 μs minimum, Pulse rise/fall: 2 μs maximum, Pulse duty: 50% and below Motor moves one step when the pulse input is switched from photocoupler ON to OFF. Maximum input pulse frequency: 200 kHz (When the pulse duty is 50%)
	All Windings Off Signal	When in the "photocoupler ON" state, the output current to the motor is cut off and the motor shaft can be rotated manually. When in the "photocoupler OFF" state, the current is supplied to the motor.
	Step Angle Select Signal	Step angle specified by DATA1 when photocoupler OFF Step angle specified by DATA2 when photocoupler ON
Output Signals	Output Mode	Photocoupler, Open-collector output External use condition: 24 VDC maximum, 10 mA maximum
	Excitation Timing Signal	The signal is output every time the excitation sequence returns to the initial stage "0." (Photocoupler: ON) 0.72°/step [Microsteps/step: 1 (Resolution: 500)]: Signal is output every 10 pulses. 0.072°/step [Microsteps/step: 10 (Resolution: 5000)]: Signal is output every 100 pulses.
	Overheat Signal	Output is turned off when the temperature of the driver heat sink rises to approximately 80°C (176°F) or above. (Photocoupler: OFF)
Functions	Automatic current cutback, Automatic current off, Step angle select, Pulse input mode switch, Smooth drive	
Indicators (LED)	Power supply input, Excitation timing signal output, Overheat signal output	
Cooling Method	Natural ventilation	

General Specifications

Item	Motor	Driver
Thermal Class	130 (B) [Recognized as 105 (A) by UL Standards]	—
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.	100 MΩ or more when 500 VDC megger is applied between the following places under normal ambient temperature and humidity: · Power input terminal – Protective earth terminal · Motor output terminal – Protective earth terminal · Signal I/O terminals – Power input terminal · Signal I/O terminals – Motor output terminal
Dielectric Strength	Sufficient to withstand 1.5 kVAC (1.0 kVAC for RK54 □), 50 Hz or 60 Hz applied between the windings and the case for 1 minute under normal temperature and humidity.	Sufficient to withstand the following for 1 minute under normal temperature and humidity: · Power input terminal – Protective earth terminal 1.5 kVAC 50 Hz or 60 Hz · Motor output terminal – Protective earth terminal 1.5 kVAC 50 Hz or 60 Hz · Signal I/O terminals – Power input terminal 1.8 kVAC 50 Hz or 60 Hz · Signal I/O terminals – Motor output terminal 1.8 kVAC 50 Hz or 60 Hz
Operating Environment	Ambient Temperature	−10~+50°C (+14~+122°F) (non-freezing): Step Angle 0.72° Standard type, TH, PS, PN geared type 0~+40°C (+32~+104°F) (non-freezing): Harmonic geared type
	Ambient Humidity	85% or less (non-condensing)
	Atmosphere	No corrosive gases, dust, water or oil (Terminal box type motor: No corrosive gases)
Temperature Rise	Temperature rise of the windings is 80°C (144°F) or less measured by the resistance change method. (at rated current, at standstill, five phases energized)	—
Stop Position Accuracy*1	±3 arc minutes (±0.05°)	—
Shaft Runout	0.05 mm (0.002 in.) T.I.R.*4	—
Radial Play*2	0.025 mm (0.001 in.) maximum of 5 N (1.12 lb.)	—
Axial Play*3	0.075 mm (0.003 in.) maximum of 10 N (2.2 lb.)	—
Concentricity	0.075 mm (0.003 in.) T.I.R.*4	—
Perpendicularity	0.075 mm (0.003 in.) T.I.R.*4	—

*1 This value is for full step under no load. (The value changes with the size of the load.)

*2 Radial Play: Displacement in shaft position in the radial direction, when a 5 N (1.12 lb.) load is applied in the vertical direction to the tip of the motor's shaft.

*3 Axial Play: Displacement in shaft position in the axial direction, when a 10 N (2.2 lb.) load is applied to the motor's shaft in the axial direction.

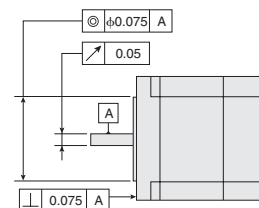
*4 T.I.R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

Note

● Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.

Encoder Specifications

→ Page A-17



Permissible Overhung Load and Permissible Thrust Load

→ Page A-15

Dimensions Unit = mm (in.)

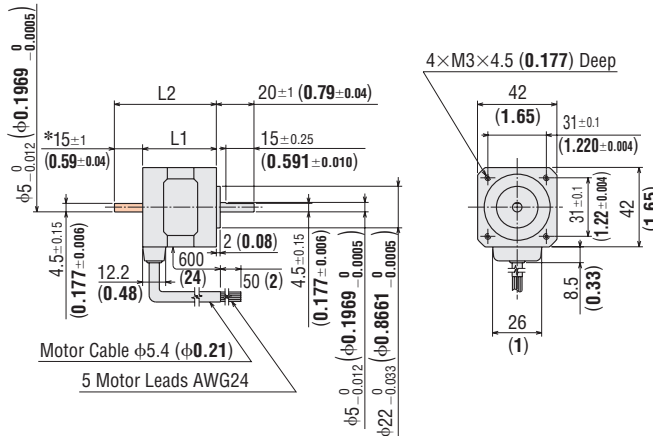
The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

● Motor

◇ Step Angle 0.72° Standard Type

Motor Frame Size 42 mm (1.65 in.)

Model	Motor Model	L1	L2	Mass kg (lb.)	DXF
RK543AA	PK543AW	33 (1.3)	—	0.25 (0.55)	B001
RK543BA	PK543BW		48 (1.89)		
RK544AA	PK544AW	39 (1.54)	—	0.3 (0.66)	B002
RK544BA	PK544BW		54 (2.13)		
RK545AA	PK545AW	47 (1.85)	—	0.4 (0.88)	B003
RK545BA	PK545BW		62 (2.44)		

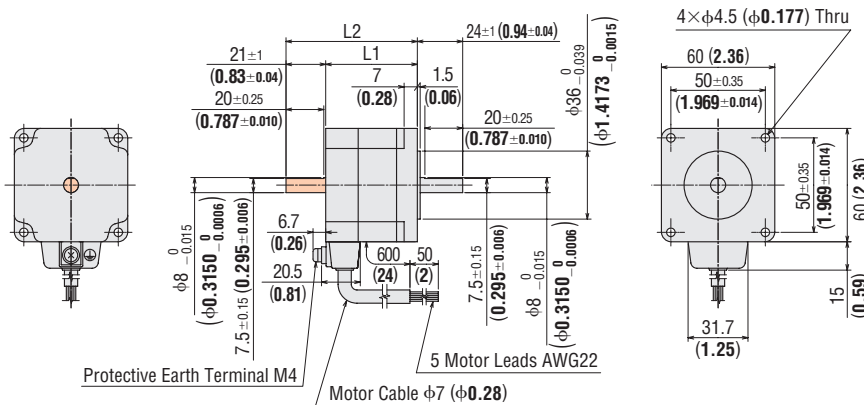


*The length of machining on the double shaft model is 15±0.25 (0.591±0.010).

Motor Frame Size 60 mm (2.36 in.)

Model	Motor Model	L1	L2	Mass kg (lb.)	DXF
RK564A□E	PK564AE	48.5 (1.91)	—	0.6 (1.3)	B382
RK564B□E	PK564BE		69.5 (2.74)		
RK566A□E	PK566AE	59.5 (2.34)	—	0.8 (1.8)	B383
RK566B□E	PK566BE		80.5 (3.17)		
RK569A□E	PK569AE	89 (3.50)	—	1.3 (2.9)	B384
RK569B□E	PK569BE		110 (4.33)		

● Enter the power supply voltage (A or C) in the box (□) within the model name.

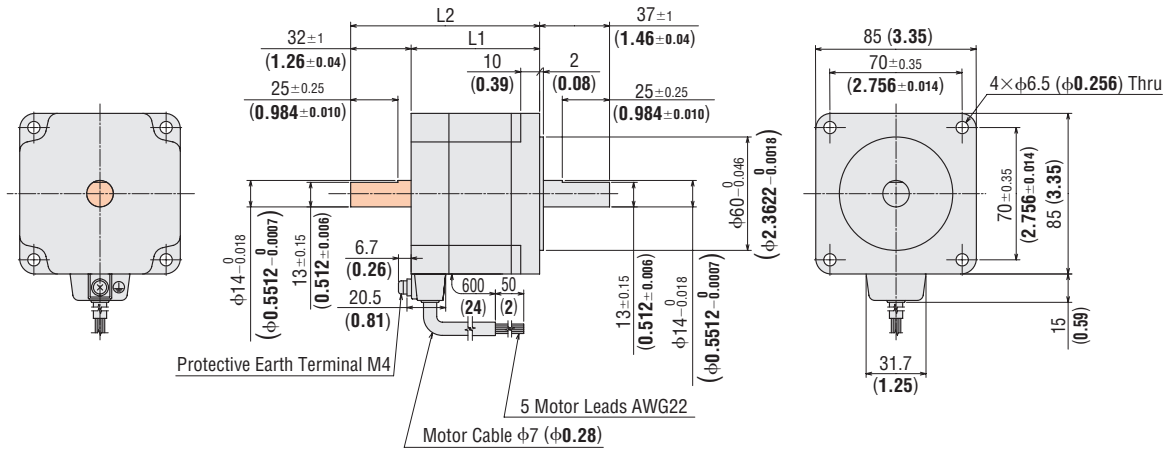


- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (■) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

Introduction	AC Input Motor & Driver	Motor Only
0.36° / Geared	0.36° / Geared	0.9°
0.72° / Geared	0.36° / Geared	1.8°
0.9° / 1.8° / Geared	0.36° / Geared	1.8° / Geared
UMK	0.36° / Geared	1.8° / Geared
0.36° / Geared	0.36° / Geared	1.8° / Geared
0.72° / Geared	0.36° / Geared	1.8° / Geared
0.9° / 1.8° / Geared	0.36° / Geared	1.8° / Geared
CMK	0.36° / Geared	1.8° / Geared
0.36° / Geared	0.36° / Geared	1.8° / Geared
0.72° / Geared	0.36° / Geared	1.8° / Geared
0.9°	0.36° / Geared	1.8° / Geared
1.8°	0.36° / Geared	1.8° / Geared
PK/PV	0.36° / Geared	1.8° / Geared
Geared	0.36° / Geared	1.8° / Geared
Controllers SCX10 EMP400 /SG8030J	0.36° / Geared	1.8° / Geared
Accessories	0.36° / Geared	1.8° / Geared

Motor Frame Size 85 mm (3.35 in.)

Model	Motor Model	L1	L2	Mass kg (lb.)	DXF
RK596A □E	PK596AE	68 (2.68)	—	1.7 (3.7)	B385
RK596B □E	PK596BE		100 (3.94)		
RK599A □E	PK599AE	98 (3.86)	—	2.8 (6.2)	B386
RK599B □E	PK599BE		130 (5.12)		
RK5913A □E	PK5913AE	128 (5.04)	—	3.8 (8.4)	B387
RK5913B □E	PK5913BE		160 (6.30)		

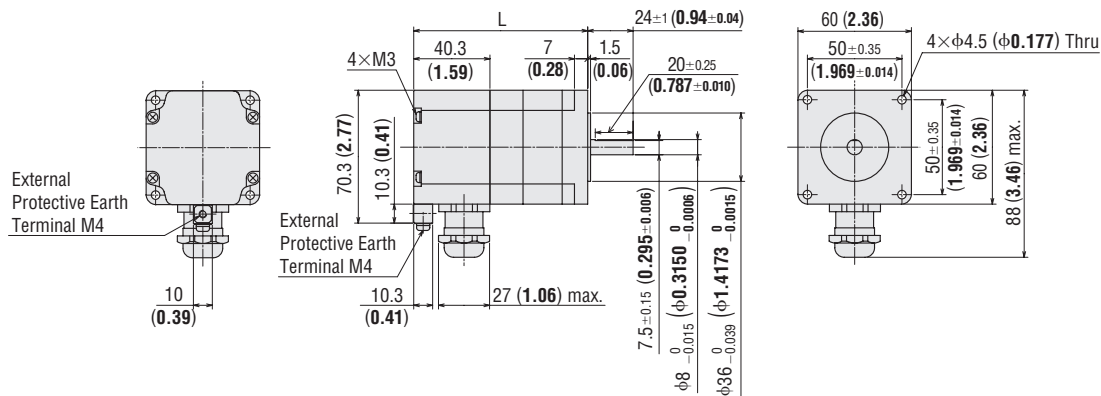


- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (■) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

◇ Step Angle 0.72° Standard Type Terminal Box

Motor Frame Size 60 mm (2.36 in.)

Model	Motor Model	L	Mass kg (lb.)	DXF
RK564A □T	PK564AT	92 (3.62)	0.8 (1.8)	B366
RK566A □T	PK566AT	103 (4.06)	1.1 (2.4)	B367
RK569A □T	PK569AT	132.5 (5.22)	1.6 (3.5)	B368



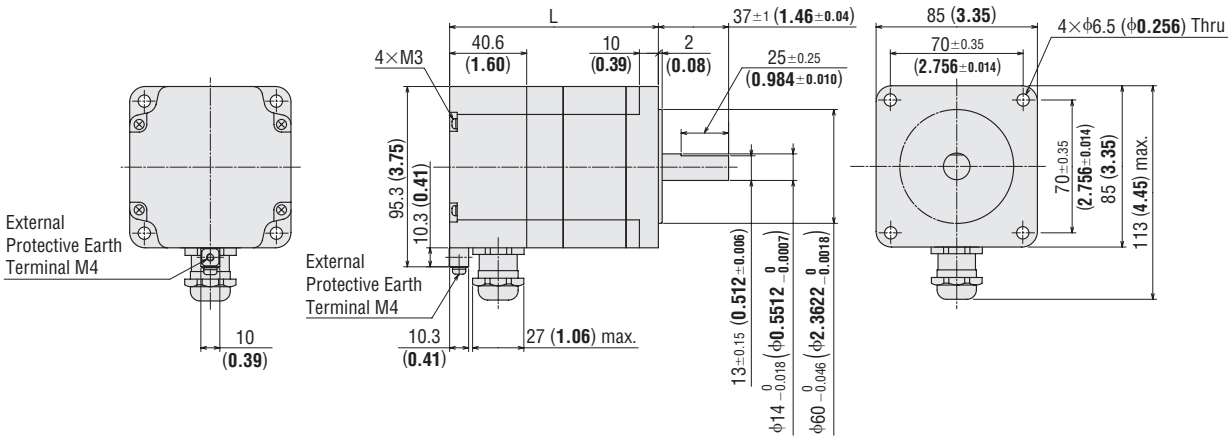
- Use cable (VCT) with a diameter of φ7~φ13 mm (φ0.28~φ0.51 in.). A connection cable is available as an accessory (sold separately). → Page A-398

- Enter the power supply voltage (A or C) in the box (□) within the model name.

Motor Frame Size 85 mm (3.35 in.)

Model	Motor Model	L	Mass kg (lb.)	DXF
RK596A □T	PK596AT	110 (4.33)	2.2 (4.8)	B369
RK599A □T	PK599AT	140 (5.51)	3.3 (7.3)	B370
RK5913A □T	PK5913AT	170 (6.69)	4.4 (9.7)	B371

● Enter the power supply voltage (A or C) in the box (□) within the model name.



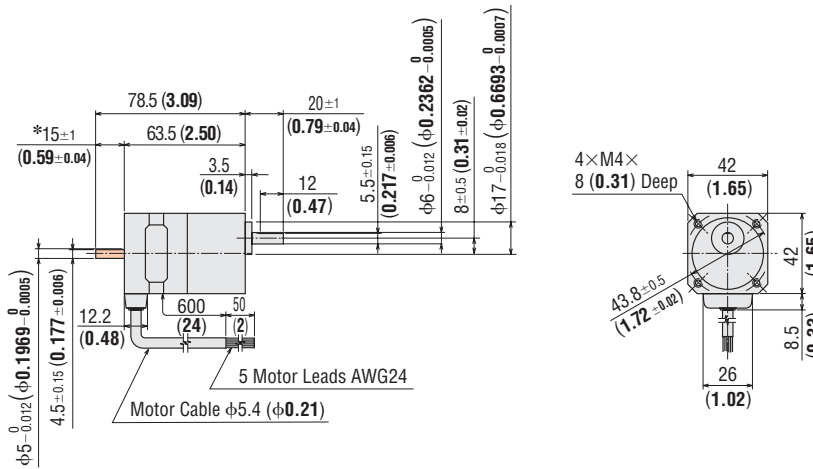
● Use cable (VCT) with a diameter of φ7~φ13 mm (φ0.28~φ0.51 in.). A connection cable is available as an accessory (sold separately). → Page A-398

◇ TH Geared Type

Motor Frame Size 42 mm (1.65 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK543AA -T□	PK543AW-T□	3.6, 7.2, 10, 20, 30	0.35 (0.77)	B183
RK543BA -T□	PK543BW-T□			

● Enter the gear ratio in the box (□) within the model name.



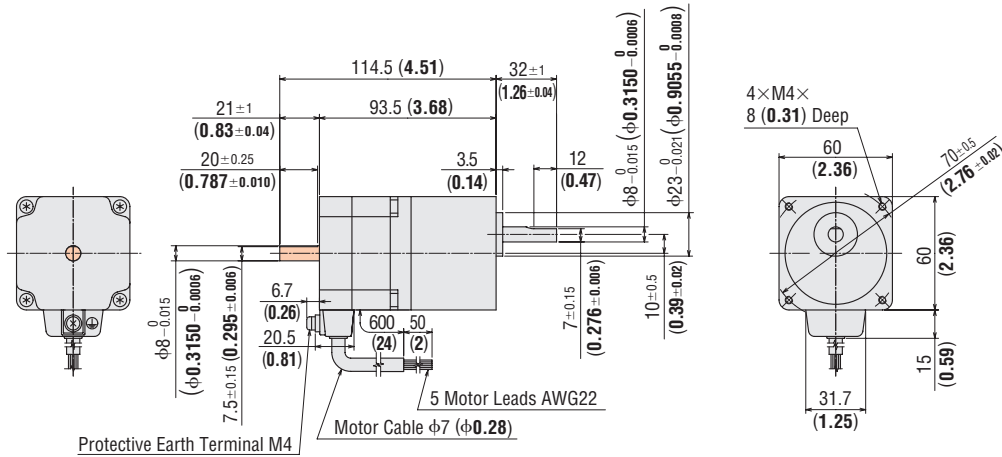
*The length of machining on the double shaft model is 15±0.25 (0.591±0.010).

- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (■) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

Introduction	AC Input Motor & Driver	DC Input Motor & Driver	Motor Only
AR	0.36° / Geared / CASTER	0.36° / Geared / CRK	0.36° / PK
AS	0.72° / Geared / RK	0.9° / 1.8° / Geared / CMK	0.72° / PK
UMK	0.9° / 1.8° / Geared / UMK	1.8° / Geared / RBK	0.9° / PK
ASX	0.36° / Geared / CASTER	1.8° / Geared / RBK	1.8° / PK/PV
			Geared / PK
			Controllers / SCX10 / EMP400 / SG8030J
			Accessories

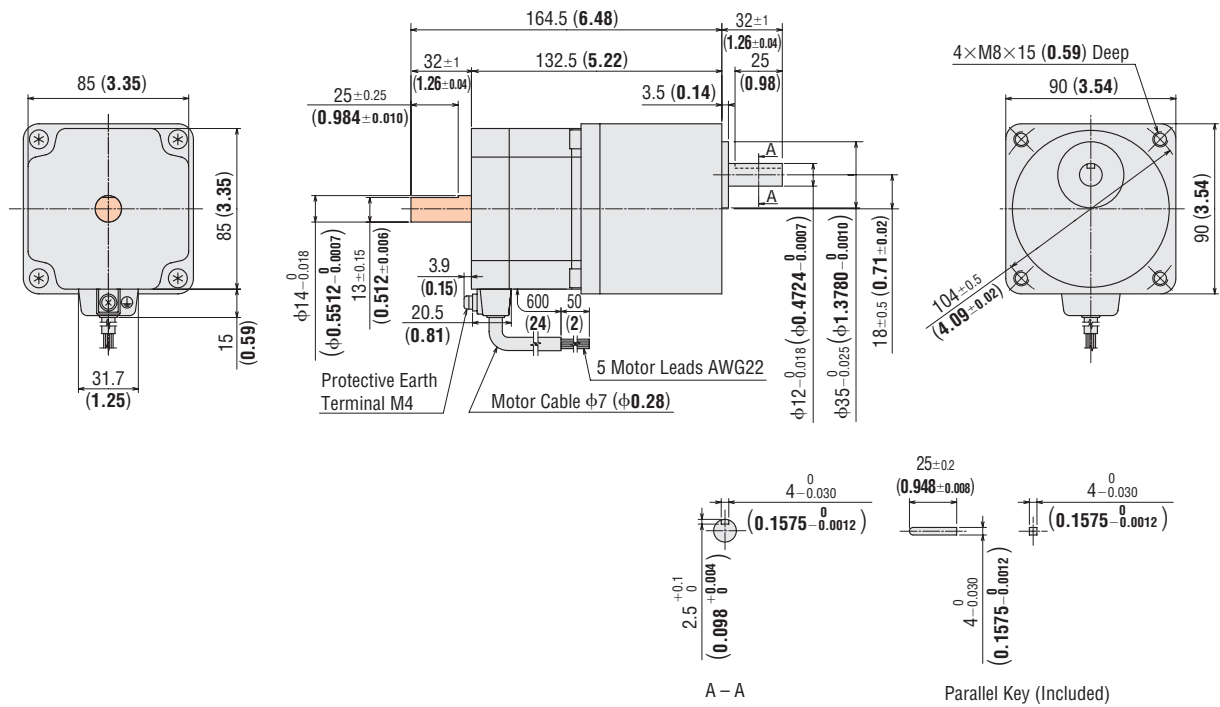
Motor Frame Size 60 mm (2.36 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK564A□E-T□	PK564AE-T□	3.6, 7.2, 10, 20, 30	0.95 (2.1)	B394
RK564B□E-T□	PK564BE-T□			



Motor Frame Size 90 mm (3.54 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK596A□E-T□	PK596AE-T□	3.6, 7.2	2.85 (6.3)	B395
RK596A□E-T□	PK596AE1-T□	10, 20, 30		
RK596B□E-T□	PK596BE-T□	3.6, 7.2	2.85 (6.3)	B395
RK596B□E-T□	PK596BE1-T□	10, 20, 30		

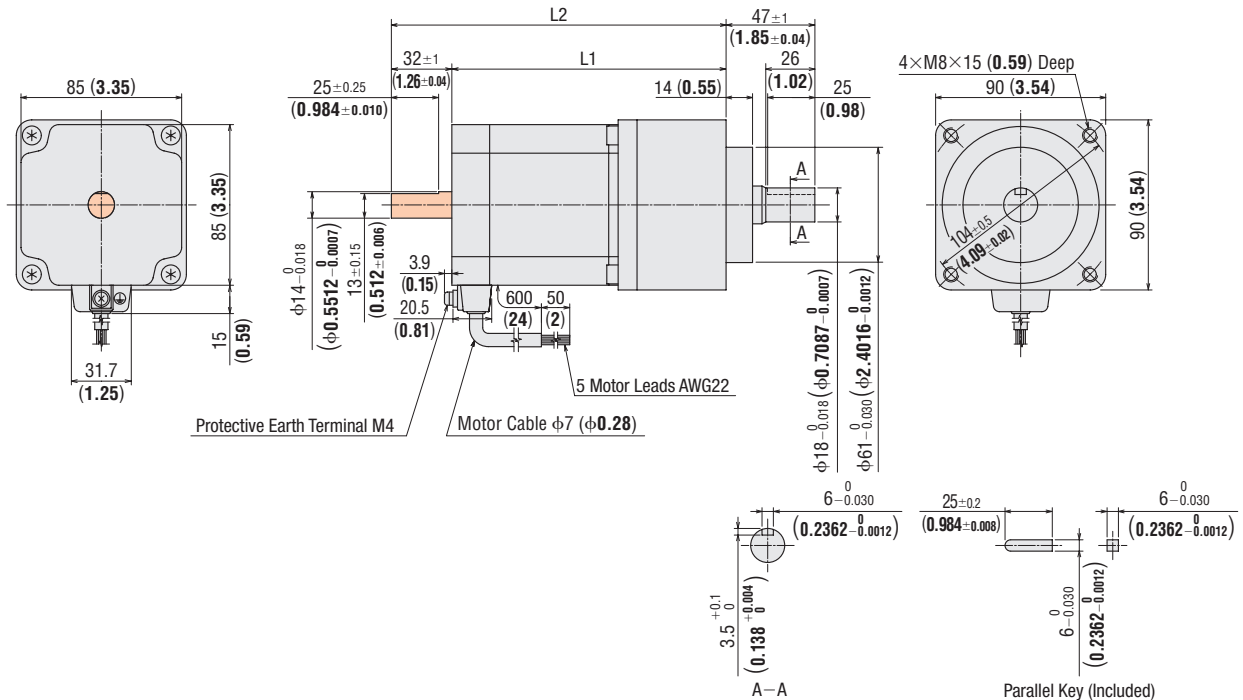


- Enter the power supply voltage (A or C) in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (■) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

Motor Frame Size 90 mm (3.54 in.)

Model	Motor Model	Gear Ratio	L1	L2	Mass kg (lb.)	DXF
RK599A □ E-PS □	PK599AE-PS □	5, 7.2, 10	145 (5.71)	—	4.4 (9.7)	B682
RK599B □ E-PS □	PK599BE-PS □			177 (6.97)		
RK596A □ E-PS □	PK596AE-PS □	25, 36, 50	142.5 (5.61)	—	4.2 (9.2)	B683
RK596B □ E-PS □	PK596BE-PS □			174.5 (6.87)		

- Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.
A number indicating the gear ratio is entered where the box (□) is located within the model name.



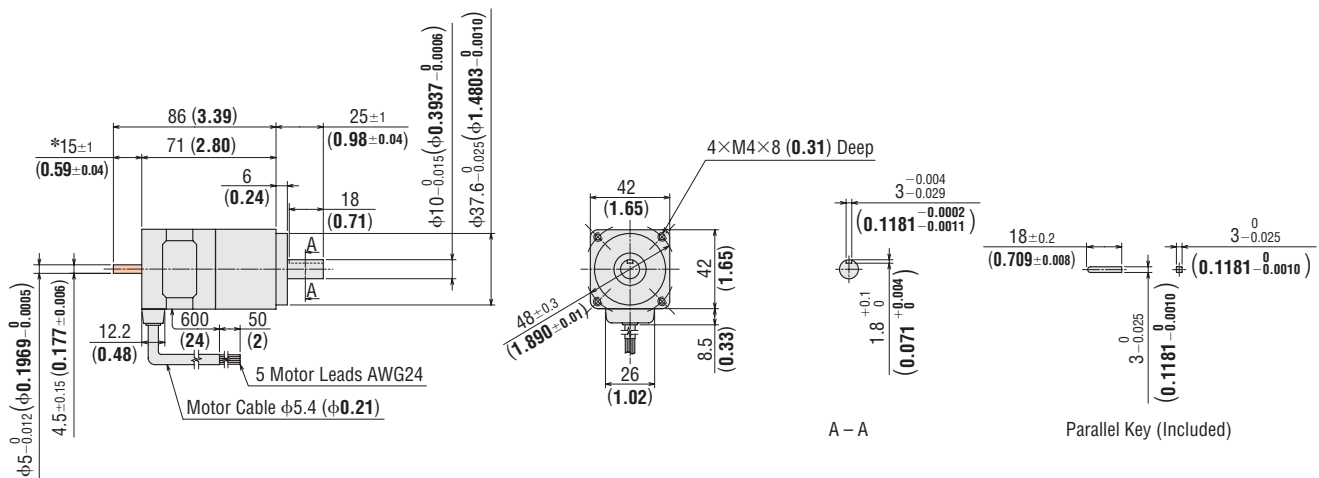
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

◇ PN Geared Type

Motor Frame Size 42 mm (1.65 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK544AA-N □	PK544AW-N □	5, 7.2, 10	0.56 (1.23)	B312
RK544BA-N □	PK544BW-N □			

- Enter the gear ratio in the box (□) with in the model name.



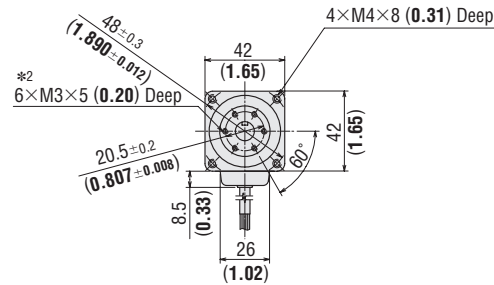
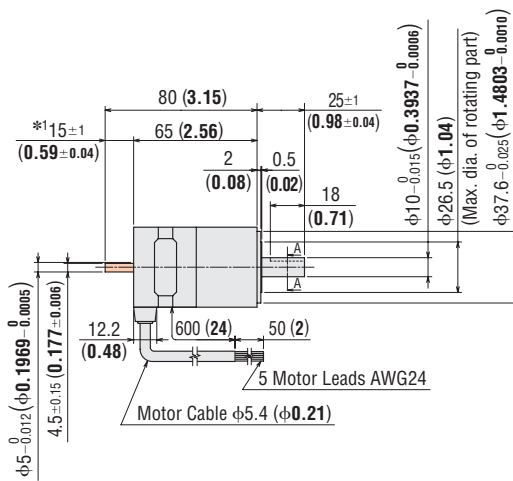
- *The length of machining on the double shaft model is 15 ± 0.25 (0.591 ± 0.010).

- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (□) areas.

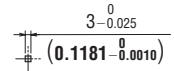
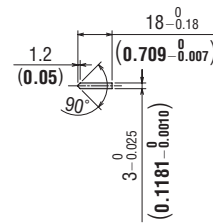
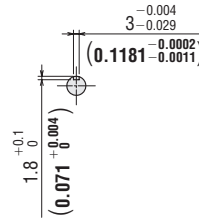
◇ Harmonic Geared Type

Motor Frame Size 42 mm (1.65 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK543AA-H <input type="checkbox"/>	PK543AW-H <input type="checkbox"/> S	50, 100	0.46 (1.01)	B313
RK543BA-H <input type="checkbox"/>	PK543BW-H <input type="checkbox"/> S			



- *1 The length of machining on the double shaft model is 15 ± 0.25 (0.591 ± 0.010).
- *2 The position of the key slot on the output shaft [φ10 (φ0.3937)] relative to the screw holes position on a maximum diameter of φ26.5 (φ1.04) on the rotating part is arbitrary.



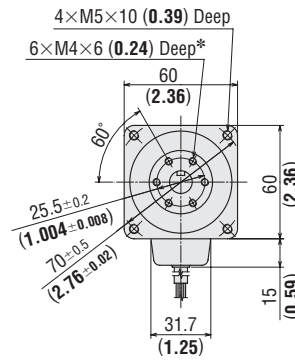
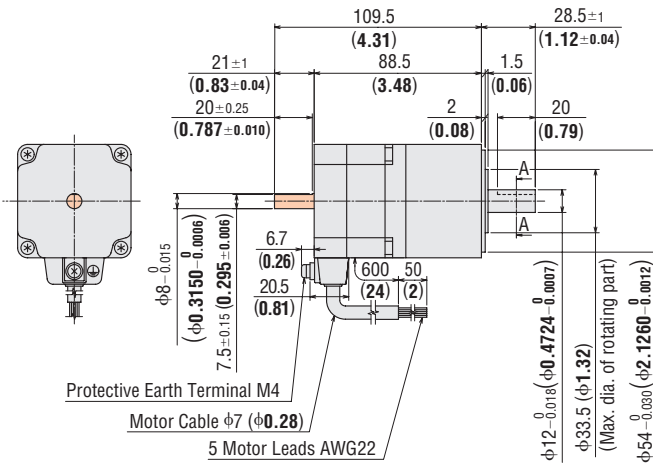
A - A

Parallel Key (Included)

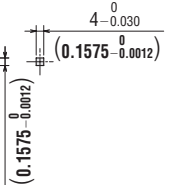
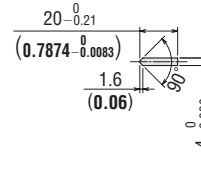
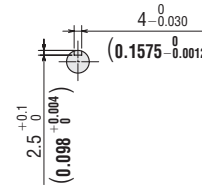
Motor Frame Size 60 mm (2.36 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK564A <input type="checkbox"/> E-H <input type="checkbox"/>	PK564AE-H <input type="checkbox"/> S	50, 100	1.08 (2.4)	B404
RK564B <input type="checkbox"/> E-H <input type="checkbox"/>	PK564BE-H <input type="checkbox"/> S			

● Enter the power supply voltage (A or C) in the box (□) within the model name.



- * The position of the key slot on the output shaft [φ12 (φ0.4724)] relative to the screw holes position on a maximum diameter of φ33.5 (φ1.32) on the rotating part is arbitrary.



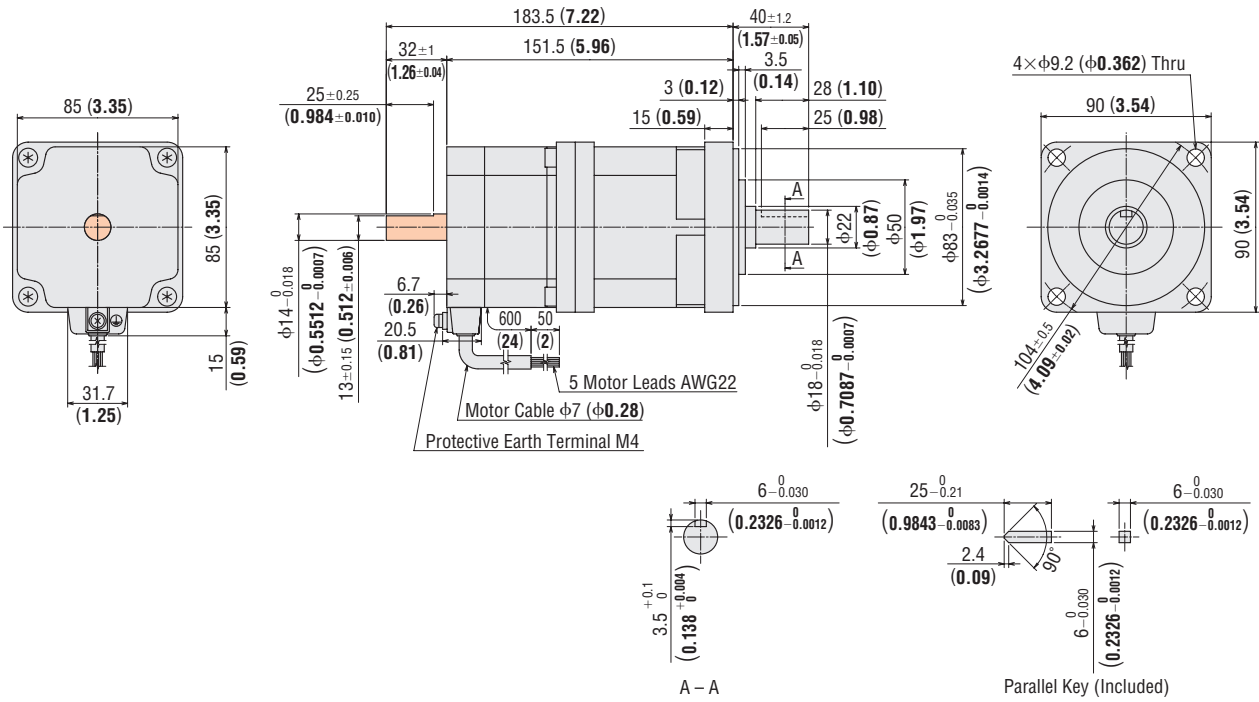
A - A

Parallel Key (Included)

- Enter the gear ratio in the box (□) with in the model name.
- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (□) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

Motor Frame Size 90 mm (3.54 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK596A <input type="checkbox"/> E-H <input type="checkbox"/>	PK596AE1-H <input type="checkbox"/>	50, 100	3.7 (8.1)	B405
RK596B <input type="checkbox"/> E-H <input type="checkbox"/>	PK596BE1-H <input type="checkbox"/>			



- Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.
- Enter the gear ratio in the box (□) with in the model name.
- These dimensions are for the double shaft models. For the single shaft models, ignore the orange (■) areas.
- The dimensions of a motor with an encoder can be found on page A-19 or at www.orientalmotor.com.

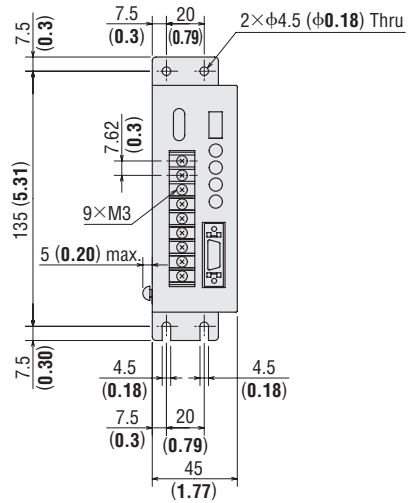
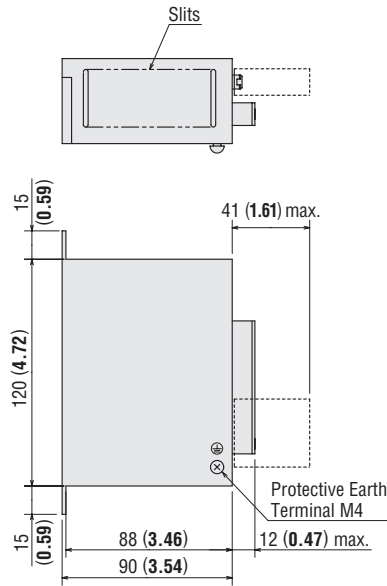
Introduction	AC Input Motor & Driver	DC Input Motor & Driver	Motor Only	Controllers	Accessories
	0.36° / Geared / C5TEP / AR	0.9°/1.8° / Geared / RK	0.36° / Geared / AR	SCX10 / EMP400 / SG8030J	
	0.36° / Geared / AS	0.36° / Geared / CRK	0.36° / Geared / ASX		
		0.9°/1.8° / Geared / CMK	1.8° / Geared / RBK		
		0.36° / Geared / PK	0.72° / Geared / PK		
		0.9° / Geared / PK	1.8° / Geared / PK/PV		
		Geared / PK			

● Driver

RKD507-A

Mass: 0.4 kg (0.88 lb.)

DXF B315

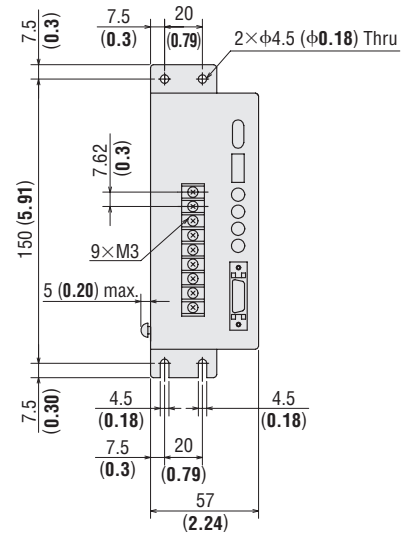
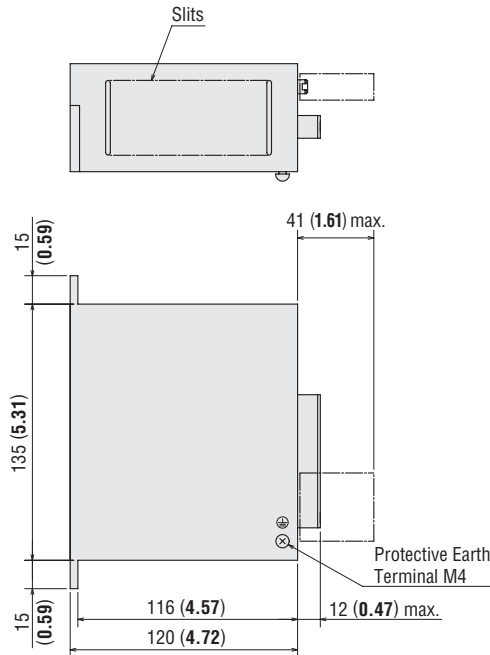


- Control I/O Connector (Included)
- Cover Assembly: 10320-52A0-008 (SUMITOMO 3M)
- Connector: 10120-3000PE (SUMITOMO 3M)

RKD514L-A, RKD514L-C
RKD514H-A, RKD514H-C

Mass: 0.85 kg (1.9 lb.)

DXF B284



- Control I/O Connector (Included)
- Cover Assembly: 10320-52A0-008 (SUMITOMO 3M)
- Connector: 10120-3000PE (SUMITOMO 3M)

Connection and Operation

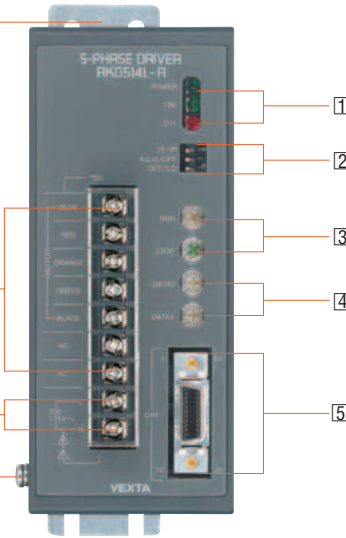
Names and Functions of Driver Parts

The driver is designed for easy mounting.

Motor Terminals
The one-touch terminal block cover uses anti slide shape to prevent it from detaching.

Power Input Terminals

Protective Earth Terminal



1 Signal Monitor Display

Indication	Color	Function
POWER	Green	Power supply indication
TIM.	Green	Excitation timing indication
O.H.	Red	Overheat indication

2 Function Select Switches

Indication	Switch Name	Function
2P/1P	Pulse input mode switch	Switches between 1-pulse input and 2-pulse input.
A.C.O./OFF	Automatic current off function switch	When the temperature of the driver heat sink rises above 80°C (176°F), this function automatically switches the motor current off. The function can be set or deactivated with this switch.
OFF/S.D.	Smooth drive function switch	Low vibration and low noise operation are available even in the low speed range without changing the step angle setting. The function can be set or deactivated with this switch.

3 Current Adjustment Switches

Indication	Switch Name	Function
RUN	Motor run current switch	For adjusting the motor running current.
STOP	Motor stop current switch	For adjusting the motor current at standstill.

4 Step Angle Setting Switches

Indication	Switch Name	Function
DATA1	Step angle setting switch	Each switch can be set to the desired resolution from the 16 resolution levels.
DATA2		

Step Angle Setting Switch (Common to DATA1 and DATA2)	Microsteps/step	Resolution	Step Angle
0	1	500	0.72°
1	2	1000	0.36°
2	2.5	1250	0.288°
3	4	2000	0.18°
4	5	2500	0.144°
5	8	4000	0.09°
6	10	5000	0.072°
7	20	10000	0.036°
8	25	12500	0.0288°
9	40	20000	0.018°
A	50	25000	0.0144°
B	80	40000	0.009°
C	100	50000	0.0072°
D	125	62500	0.00576°
E	200	100000	0.0036°
F	250	125000	0.00288°

◇ Setting the Step Angles

Selects and switches between the two step angle setting switches (DATA1 and DATA2).

Use the "Step Angle Select" signal to change the step angle.

Photocoupler OFF: Step angle (resolution) set by DATA1 is selected.

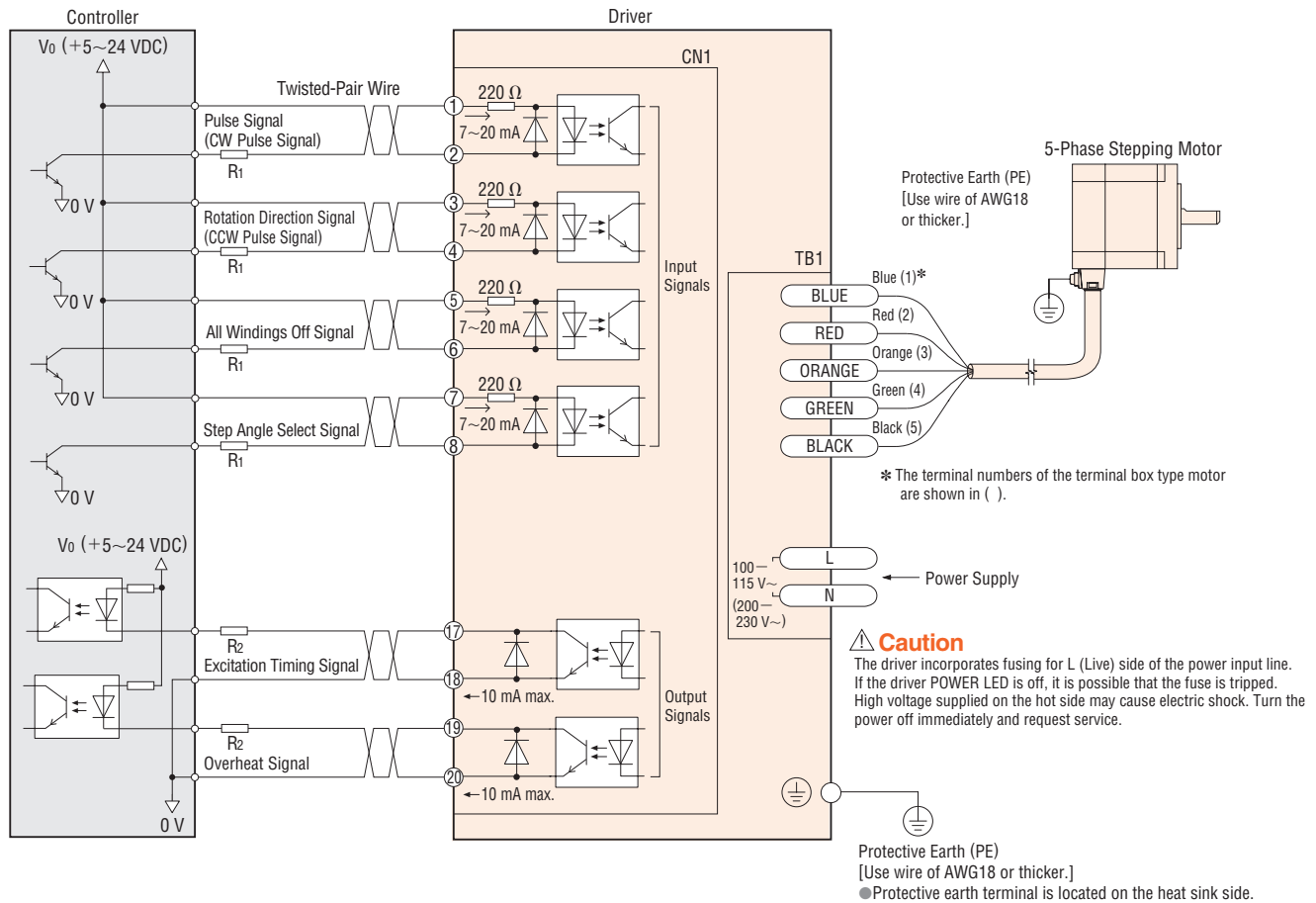
Photocoupler ON: Step angle (resolution) set by DATA2 is selected.

5 Input/Output Signals

Indication	Input/Output	Pin No.	Signal Name	Function
CN1	Input	1	Pulse signal	Operation command pulse signal
		2	(CW pulse signal)	(The motor will rotate in the CW direction when in 2-pulse input mode.)
		3	Rotation direction signal	Rotation direction signal Photocoupler ON: CW, Photocoupler OFF: CCW
		4	(CCW pulse signal)	(The motor will rotate in the CCW direction when in 2-pulse input mode.)
	5	All windings off signal	Cuts the output current to the motor and allows the motor shafts to be rotated manually.	
	6			
	7	Step angle select signal	Switches to step angle set in DATA1 and DATA2.	
	8			
Output	17	Excitation timing signal	Outputs signals when the excitation sequence is at STEP "0."	
	18			
	19	Overheat signal	When the temperature of the driver heat sink rises above 80°C (176°F), this function automatically turns the output signal off.	
	20			

● Connection Diagram

◇ Connection to Current Sink Output Circuit



Notes on Wiring

◇ I/O Signal Connection

- Input Signal
The external resistor is not needed when the voltage is 5 VDC. If voltage exceeding 5 VDC is applied, connect an appropriate external resistor R_1 so that the current becomes 7 to 20 mA. Example: When V_0 is 24 VDC, R_1 : 1.5 to 2.2 k Ω 0.5 W or more
- Output Signal
Check the specifications of all devices to be connected and if the current will exceed 10 mA, connect an external resistor R_2 .
- Use a twisted-pair wire of AWG28 to 24.
- Since the maximum transmissible frequency drops as the pulse line becomes longer, keep the wiring length as short as possible (within 2 m).
Technical reference → Page G-44
- Provide a minimum distance of 100 mm between the I/O signal lines and power lines (power supply lines, motor lines and other large-current circuits).

◇ Power Connection

- Use a thick wire of AWG22 or thicker.

◇ Extension of Motor Cable

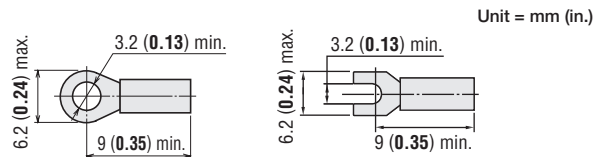
- Use a wire of AWG22 or thicker.

◇ Ground Connection

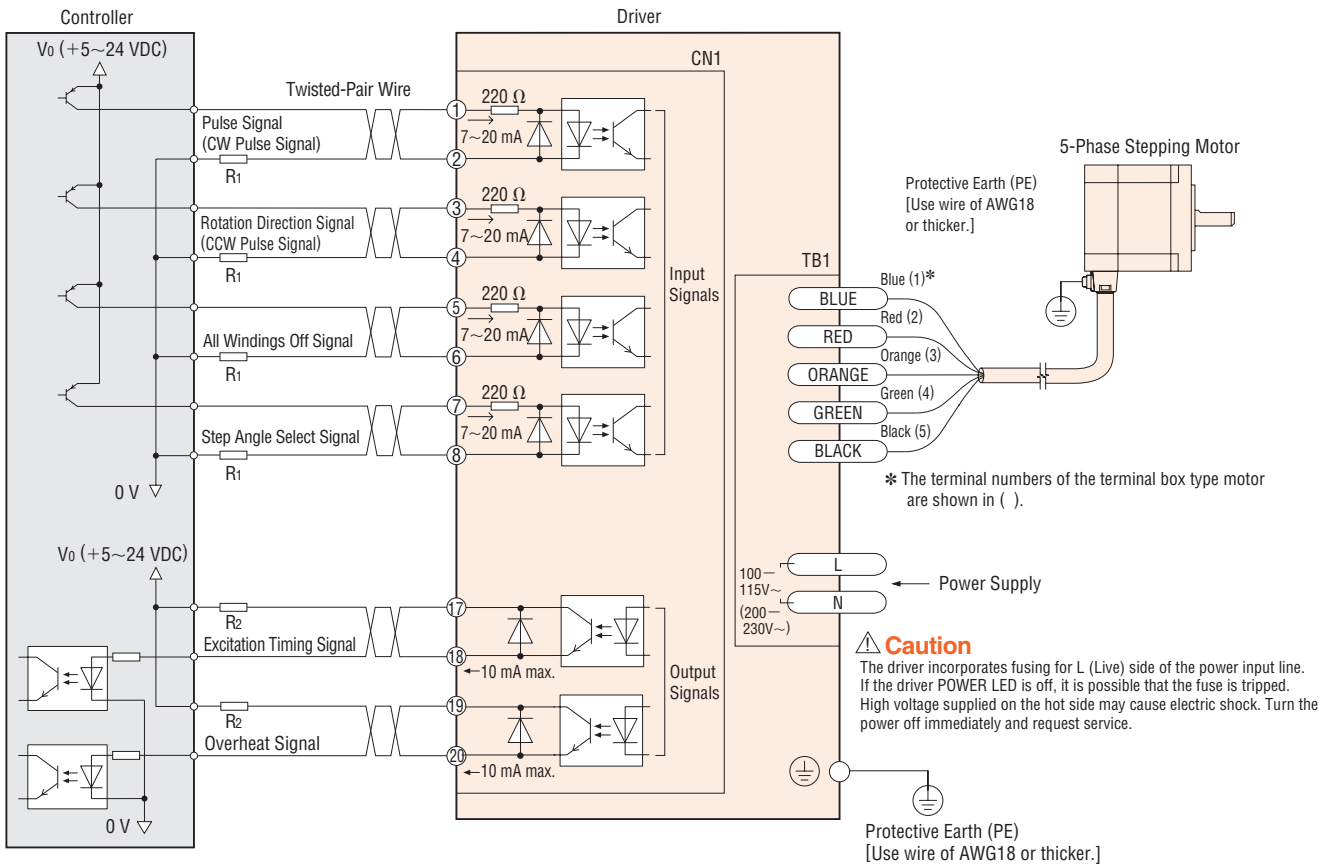
- Use a wire of AWG18 or thicker.
- Connect the driver and controller to a ground at a single point.

◇ General

- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.
- Applicable Crimp Terminals (Not included)



◇ Connection to Current Source Output Circuit



Notes on Wiring

◇ I/O Signal Connection

- **Input Signal**
The external resistor is not needed when the voltage is 5 VDC. If voltage exceeding 5 VDC is applied, connect an appropriate external resistor R_1 so that the current becomes 7 to 20 mA.
Example: When V_0 is 24 VDC, R_1 : 1.5 to 2.2 k Ω 0.5 W or more
- **Output Signal**
Check the specifications of all devices to be connected and if the current will exceed 10 mA, connect an external resistor R_2 .
- Use a twisted-pair wire of AWG28 to 24.
- Since the maximum transmissible frequency drops as the pulse line becomes longer, keep the wiring length as short as possible (within 2 m).
Technical reference → Page G-44
- Provide a minimum distance of 100 mm between the I/O signal lines and power lines (power supply lines, motor lines and other large-current circuits).

◇ Power Connection

- Use a thick wire of AWG22 or thicker.

◇ Extension of Motor Cable

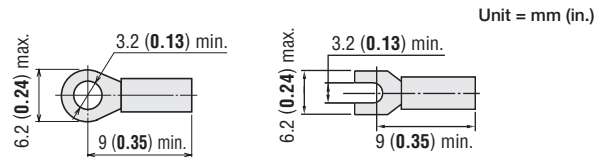
- Use a wire of AWG22 or thicker.

◇ Ground Connection

- Use a wire of AWG18 or thicker.
- Connect the driver and controller to a ground at a single point.

◇ General

- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.
- Applicable Crimp Terminals (Not included)



Introduction	AC Input Motor & Driver	DC Input Motor & Driver
0.36° / Geared	0.36° / Geared	0.36° / Geared
0.72° / Geared	0.72° / Geared	0.72° / Geared
1.8° / Geared	1.8° / Geared	1.8° / Geared
3.6° / Geared	3.6° / Geared	3.6° / Geared
7.2° / Geared	7.2° / Geared	7.2° / Geared
14.4° / Geared	14.4° / Geared	14.4° / Geared
28.8° / Geared	28.8° / Geared	28.8° / Geared
57.6° / Geared	57.6° / Geared	57.6° / Geared
115.2° / Geared	115.2° / Geared	115.2° / Geared
230.4° / Geared	230.4° / Geared	230.4° / Geared
460.8° / Geared	460.8° / Geared	460.8° / Geared
921.6° / Geared	921.6° / Geared	921.6° / Geared
1843.2° / Geared	1843.2° / Geared	1843.2° / Geared
3686.4° / Geared	3686.4° / Geared	3686.4° / Geared
7372.8° / Geared	7372.8° / Geared	7372.8° / Geared
14745.6° / Geared	14745.6° / Geared	14745.6° / Geared
29491.2° / Geared	29491.2° / Geared	29491.2° / Geared
58982.4° / Geared	58982.4° / Geared	58982.4° / Geared
117964.8° / Geared	117964.8° / Geared	117964.8° / Geared
235929.6° / Geared	235929.6° / Geared	235929.6° / Geared
471859.2° / Geared	471859.2° / Geared	471859.2° / Geared
943718.4° / Geared	943718.4° / Geared	943718.4° / Geared
1887436.8° / Geared	1887436.8° / Geared	1887436.8° / Geared
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265633114661417543270.4° / Geared	265633114661417543270.4° / Geared	265633114661417543270.4° / Geared
531266229322835086540.8° / Geared	531266229322835086540.8° / Geared	531266229322835086540.8° / Geared
1062532458645670173081.6° / Geared	1062532458645670173081.6° / Geared	1062532458645670173081.6° / Geared
2125064917291340346163.2° / Geared	2125064917291340346163.2° / Geared	2125064917291340346163.2° / Geared
4250129834582680692326.4° / Geared	4250129834582680692326.4° / Geared	4250129834582680692326.4° / Geared
8500259669165361384652.8° / Geared	8500259669165361384652.8° / Geared	8500259669165361384652.8° / Geared
17000519338330722773305.6° / Geared	17000519338330722773305.6° / Geared	17000519338330722773305.6° / Geared
34001038676661445546611.2° / Geared	34001038676661445546611.2° / Geared	34001038676661445546611.2° / Geared
68002077353322891093222.4° / Geared	68002077353322891093222.4° / Geared	68002077353322891093222.4° / Geared
136004154706645782186444.8° / Geared	136004154706645782186444.8° / Geared	136004154706645782186444.8° / Geared
272008309413291564372889.6° / Geared	272008309413291564372889.6° / Geared	272008309413291564372889.6° / Geared
544016618826583128745779.2° / Geared	544016618826583128745779.2° / Geared	544016618826583128745779.2° / Geared
1088033237653166257491558.4° / Geared	1088033237653166257491558.4° / Geared	1088033237653166257491558.4° / Geared
2176066475306332514983116.8° / Geared	2176066475306332514983116.8° / Geared	2176066475306332514983116.8° / Geared
4352132950612665029966233.6° / Geared	4352132950612665029966233.6° / Geared	4352132950612665029966233.6° / Geared
8704265901225330059932467.2° / Geared	8704265901225330059932467.2° / Geared	8704265901225330059932467.2° / Geared
17408530802450660119864934.4° / Geared	17408530802450660119864934.4° / Geared	17408530802450660119864934.4° / Geared
34817061604901320239729868.8° / Geared	34817061604901320239729868.8° / Geared	34817061604901320239729868.8° / Geared
69634123209802640479459737.6° / Geared	69634123209802640479459737.6° / Geared	69634123209802640479459737.6° / Geared
139268246419605280958919475.2° / Geared	139268246419605280958919475.2° / Geared	139268246419605280958919475.2° / Geared
278536492839210561917838950.4° / Geared	278536492839210561917838950.4° / Geared	278536492839210561917838950.4° / Geared
557072985678421123835677900.8° / Geared	557072985678421123835677900.8° / Geared	557072985678421123835677900.8° / Geared
1114145971356842247671355801.6° / Geared	1114145971356842247671355801.6° / Geared	1114145971356842247671355801.6° / Geared
2228291942713684495342711603.2° / Geared	2228291942713684495342711603.2° / Geared	2228291942713684495342711603.2° / Geared
4456583885427368990685423206.4° / Geared	4456583885427368990685423206.4° / Geared	4456583885427368990685423206.4° / Geared
8913167770854737981370846412.8° / Geared	8913167770854737981370846412.8° / Geared	8913167770854737981370846412.8° / Geared
17826335541709475962741692825.6° / Geared	17826335541709475962741692825.6° / Geared	17826335541709475962741692825.6° / Geared
35652671083418951925483385651.2° / Geared	35652671083418951925483385651.2° / Geared	35652671083418951925483385651.2° / Geared
71305342166837903850966771302.4° / Geared	71305342166837903850966771302.4° / Geared	71305342166837903850966771302.4° / Geared
142610684333675807701933542604.8° / Geared	142610684333675807701933542604.8° / Geared	142610684333675807701933542604.8° / Geared
285221368667351615403867085209.6° / Geared	285221368667351615403867085209.6° / Geared	285221368667351615403867085209.6° / Geared
570442737334703230807734170419.2° / Geared	570442737334703230807734170419.2° / Geared	570442737334703230807734170419.2° / Geared
1140885474669406461615468340838.4° / Geared	1140885474669406461615468340838.4° / Geared	1140885474669406461615468340838.4° / Geared
2281770949338812923230936681676.8° / Geared	2281770949338812923230936681676.8° / Geared	2281770949338812923230936681676.8° / Geared
4563541898677625846461873363353.6° / Geared	4563541898677625846461873363353.6° / Geared	4563541898677625846461873363353.6° / Geared
9127083797355251692923746726707.2° / Geared	9127083797355251692923746726707.2° / Geared	9127083797355251692923746726707.2° / Geared
18254167594710503385847493453414.4° / Geared	18254167594710503385847493453414.4° / Geared	18254167594710503385847493453414.4° / Geared
36508335189421006771694987006828.8° / Geared	36508335189421006771694987006828.8° / Geared	36508335189421006771694987006828.8° / Geared
73016670378842013543389974013657.6° / Geared	73016670378842013543389974013657.6° / Geared	73016670378842013543389974013657.6° / Geared
146033340757684027086779948027315.2° / Geared	146033340757684027086779948027315.2° / Geared	146033340757684027086779948027315.2° / Geared
292066681515368054173559896054630.4° / Geared	292066681515368054173559896054630.4° / Geared	292066681515368054173559896054630.4° / Geared
584133363030736108347119792109260.8° / Geared	584133363030736108347119792109260.8° / Geared	584133363030736108347119792109260.8° / Geared
116826672606147221669439584421851.6° / Geared	116826672606147221669439584421851.6° / Geared	116826672606147221669439584421851.6° / Geared
233653345212294443338879168843703.2° / Geared	233653345212294443338879168843703.2° / Geared	233653345212294443338879168843703.2° / Geared
467306690424588886677758337687406.4° / Geared	467306690424588886677758337687406.4° / Geared	467306690424588886677758337687406.4° / Geared
934613380849177773355516675374812.8° / Geared	934613380849177773355516675374812.8° / Geared	934613380849177773355516675374812.8° / Geared
18692267616983555467110333		

List of Motor and Driver Combinations

Model names for motor and driver combinations are shown below.

Without Encoder

Type	Model	Motor Model	Driver Model		
Step Angle 0.72° Standard Type	RK543 □ A RK544 □ A RK545 □ A	PK543□W PK544□W PK545□W	RKD507-A		
	RK564 □ AE RK566 □ AE RK569 □ AE	PK564□E PK566□E PK569□E	RKD514L-A		
	RK596 □ AE RK599 □ AE RK5913 □ AE	PK596□E PK599□E PK5913□E	RKD514H-A		
	RK564 □ CE RK566 □ CE RK569 □ CE	PK564□E PK566□E PK569□E	RKD514L-C		
	RK596 □ CE RK599 □ CE RK5913 □ CE	PK596□E PK599□E PK5913□E	RKD514H-C		
	Step Angle 0.72° Standard Type Terminal Box	RK564AAT RK566AAT RK569AAT	PK564AT PK566AT PK569AT	RKD514L-A	
		RK596AAT RK599AAT RK5913AAT	PK596AT PK599AT PK5913AT	RKD514H-A	
		RK564ACT RK566ACT RK569ACT	PK564AT PK566AT PK569AT	RKD514L-C	
		RK596ACT RK599ACT RK5913ACT	PK596AT PK599AT PK5913AT	RKD514H-C	
		TH Geared Type	RK543 □ A-T3.6 RK543 □ A-T7.2 RK543 □ A-T10 RK543 □ A-T20 RK543 □ A-T30	PK543□W-T3.6 PK543□W-T7.2 PK543□W-T10 PK543□W-T20 PK543□W-T30	RKD507-A
			RK564 □ AE-T3.6 RK564 □ AE-T7.2 RK564 □ AE-T10 RK564 □ AE-T20 RK564 □ AE-T30	PK564□E-T3.6 PK564□E-T7.2 PK564□E-T10 PK564□E-T20 PK564□E-T30	RKD514L-A
			RK596 □ AE-T3.6 RK596 □ AE-T7.2 RK596 □ AE-T10 RK596 □ AE-T20 RK596 □ AE-T30	PK596□E-T3.6 PK596□E-T7.2 PK596□E1-T10 PK596□E1-T20 PK596□E1-T30	RKD514H-A
RK564 □ CE-T3.6 RK564 □ CE-T7.2 RK564 □ CE-T10 RK564 □ CE-T20 RK564 □ CE-T30			PK564□E-T3.6 PK564□E-T7.2 PK564□E-T10 PK564□E-T20 PK564□E-T30	RKD514L-C	
RK596 □ CE-T3.6 RK596 □ CE-T7.2 RK596 □ CE-T10 RK596 □ CE-T20 RK596 □ CE-T30	PK596□E-T3.6 PK596□E-T7.2 PK596□E1-T10 PK596□E1-T20 PK596□E1-T30		RKD514H-C		

● Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.

Type	Model	Motor Model	Driver Model		
PS Geared Type	RK545 □ A-PS5 RK545 □ A-PS7 RK545 □ A-PS10 RK543 □ A-PS25 RK543 □ A-PS36 RK543 □ A-PS50	PK545□W-PS5 PK545□W-PS7 PK545□W-PS10 PK543□W-PS25 PK543□W-PS36 PK543□W-PS50	RKD507-A		
	RK566 □ AE-PS5 RK566 □ AE-PS7 RK566 □ AE-PS10 RK564 □ AE-PS25 RK564 □ AE-PS36 RK564 □ AE-PS50	PK566□E-PS5 PK566□E-PS7 PK566□E-PS10 PK564□E-PS25 PK564□E-PS36 PK564□E-PS50	RKD514L-A		
	RK599 □ AE-PS5 RK599 □ AE-PS7 RK599 □ AE-PS10 RK596 □ AE-PS25 RK596 □ AE-PS36 RK596 □ AE-PS50	PK599□E-PS5 PK599□E-PS7 PK599□E-PS10 PK596□E-PS25 PK596□E-PS36 PK596□E-PS50	RKD514H-A		
	RK566 □ CE-PS5 RK566 □ CE-PS7 RK566 □ CE-PS10 RK564 □ CE-PS25 RK564 □ CE-PS36 RK564 □ CE-PS50	PK566□E-PS5 PK566□E-PS7 PK566□E-PS10 PK564□E-PS25 PK564□E-PS36 PK564□E-PS50	RKD514L-C		
	RK599 □ CE-PS5 RK599 □ CE-PS7 RK599 □ CE-PS10 RK596 □ CE-PS25 RK596 □ CE-PS36 RK596 □ CE-PS50	PK599□E-PS5 PK599□E-PS7 PK599□E-PS10 PK596□E-PS25 PK596□E-PS36 PK596□E-PS50	RKD514H-C		
	PN Geared Type	RK544 □ A-N5 RK544 □ A-N7.2 RK544 □ A-N10	PK544□W-N5 PK544□W-N7.2 PK544□W-N10	RKD507-A	
		RK566 □ AE-N5 RK566 □ AE-N7.2 RK566 □ AE-N10 RK564 □ AE-N25 RK564 □ AE-N36 RK564 □ AE-N50	PK566□E-N5 PK566□E-N7.2 PK566□E-N10 PK564□E-N25 PK564□E-N36 PK564□E-N50	RKD514L-A	
		RK599 □ AE-N5 RK599 □ AE-N7.2 RK599 □ AE-N10 RK596 □ AE-N25 RK596 □ AE-N36 RK596 □ AE-N50	PK599□E-N5 PK599□E-N7.2 PK599□E-N10 PK596□E-N25 PK596□E-N36 PK596□E-N50	RKD514H-A	
		RK566 □ CE-N5 RK566 □ CE-N7.2 RK566 □ CE-N10 RK564 □ CE-N25 RK564 □ CE-N36 RK564 □ CE-N50	PK566□E-N5 PK566□E-N7.2 PK566□E-N10 PK564□E-N25 PK564□E-N36 PK564□E-N50	RKD514L-C	
		RK599 □ CE-N5 RK599 □ CE-N7.2 RK599 □ CE-N10 RK596 □ CE-N25 RK596 □ CE-N36 RK596 □ CE-N50	PK599□E-N5 PK599□E-N7.2 PK599□E-N10 PK596□E-N25 PK596□E-N36 PK596□E-N50	RKD514H-C	
		Harmonic Geared Type	RK543 □ A-H50 RK543 □ A-H100	PK543□W-H50S PK543□W-H100S	RKD507-A
			RK564 □ AE-H50 RK564 □ AE-H100	PK564□E-H50S PK564□E-H100S	RKD514L-A
RK596 □ AE-H50 RK596 □ AE-H100			PK596□E1-H50 PK596□E1-H100	RKD514H-A	
RK564 □ CE-H50 RK564 □ CE-H100			PK564□E-H50S PK564□E-H100S	RKD514L-C	
		RK596 □ CE-H50 RK596 □ CE-H100	PK596□E1-H50 PK596□E1-H100	RKD514H-C	

● Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.

● With Encoder

Type	Model	Motor Model	Driver Model
Step Angle 0.72° Standard Type with Encoder	RK543AA-R27 RK544AA-R27 RK545AA-R27	PK543AW-R27 PK544AW-R27 PK545AW-R27	RKD507-A
	RK564AAE-R27 RK566AAE-R27 RK569AAE-R27	PK564AE-R27 PK566AE-R27 PK569AE-R27	RKD514L-A
	RK596AAE-R27 RK599AAE-R27 RK5913AAE-R27	PK596AE-R27 PK599AE-R27 PK5913AE-R27	RKD514H-A
	RK564ACE-R27 RK566ACE-R27 RK569ACE-R27	PK564AE-R27 PK566AE-R27 PK569AE-R27	RKD514L-C
	RK596ACE-R27 RK599ACE-R27 RK5913ACE-R27	PK596AE-R27 PK599AE-R27 PK5913AE-R27	RKD514H-C
	RK543AAR27T3.6 RK543AAR27T7.2 RK543AAR27T10 RK543AAR27T20 RK543AAR27T30	PK543AWR27T3.6 PK543AWR27T7.2 PK543AWR27T10 PK543AWR27T20 PK543AWR27T30	RKD507-A
	RK564AAER27T3.6 RK564AAER27T7.2 RK564AAER27T10 RK564AAER27T20 RK564AAER27T30	PK564AER27T3.6 PK564AER27T7.2 PK564AER27T10 PK564AER27T20 PK564AER27T30	RKD514L-A
	RK596AAER27T3.6 RK596AAER27T7.2 RK596AAER27T10 RK596AAER27T20 RK596AAER27T30	PK596AER27T3.6 PK596AER27T7.2 PK596AE1R27T10 PK596AE1R27T20 PK596AE1R27T30	RKD514H-A
	RK564ACER27T3.6 RK564ACER27T7.2 RK564ACER27T10 RK564ACER27T20 RK564ACER27T30	PK564AER27T3.6 PK564AER27T7.2 PK564AER27T10 PK564AER27T20 PK564AER27T30	RKD514L-C
	RK596ACER27T3.6 RK596ACER27T7.2 RK596ACER27T10 RK596ACER27T20 RK596ACER27T30	PK596AER27T3.6 PK596AER27T7.2 PK596AE1R27T10 PK596AE1R27T20 PK596AE1R27T30	RKD514H-C
TH Geared Type with Encoder	RK543AAR27H50 RK543AAR27H100	PK543AWR27H50 PK543AWR27H100	RKD507-A
	RK564AAER27H50 RK564AAER27H100	PK564AER27H50 PK564AER27H100	RKD514L-A
	RK596AAER27H50 RK596AAER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-A
	RK564ACER27H50 RK564ACER27H100	PK564AER27H50 PK564AER27H100	RKD514L-C
	RK596ACER27H50 RK596ACER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-C
	RK543AAR27H50 RK543AAR27H100	PK543AWR27H50 PK543AWR27H100	RKD507-A
	RK564AAER27H50 RK564AAER27H100	PK564AER27H50 PK564AER27H100	RKD514L-A
	RK596AAER27H50 RK596AAER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-A
	RK564ACER27H50 RK564ACER27H100	PK564AER27H50 PK564AER27H100	RKD514L-C
	RK596ACER27H50 RK596ACER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-C

Type	Model	Motor Model	Driver Model
PS Geared Type with Encoder	RK545AAR27PS5 RK545AAR27PS7 RK545AAR27PS10 RK543AAR27PS25 RK543AAR27PS36 RK543AAR27PS50	PK545AWR27PS5 PK545AWR27PS7 PK545AWR27PS10 PK543AWR27PS25 PK543AWR27PS36 PK543AWR27PS50	RKD507-A
	RK566AAER27PS5 RK566AAER27PS7 RK566AAER27PS10 RK564AAER27PS25 RK564AAER27PS36 RK564AAER27PS50	PK566AER27PS5 PK566AER27PS7 PK566AER27PS10 PK564AER27PS25 PK564AER27PS36 PK564AER27PS50	RKD514L-A
	RK599AAER27PS5 RK599AAER27PS7 RK599AAER27PS10 RK596AAER27PS25 RK596AAER27PS36 RK596AAER27PS50	PK599AER27PS5 PK599AER27PS7 PK599AER27PS10 PK596AER27PS25 PK596AER27PS36 PK596AER27PS50	RKD514H-A
	RK566ACER27PS5 RK566ACER27PS7 RK566ACER27PS10 RK564ACER27PS25 RK564ACER27PS36 RK564ACER27PS50	PK566AER27PS5 PK566AER27PS7 PK566AER27PS10 PK564AER27PS25 PK564AER27PS36 PK564AER27PS50	RKD514L-C
	RK599ACER27PS5 RK599ACER27PS7 RK599ACER27PS10 RK596ACER27PS25 RK596ACER27PS36 RK596ACER27PS50	PK599AER27PS5 PK599AER27PS7 PK599AER27PS10 PK596AER27PS25 PK596AER27PS36 PK596AER27PS50	RKD514H-C
	RK543AAR27H50 RK543AAR27H100	PK543AWR27H50 PK543AWR27H100	RKD507-A
	RK564AAER27H50 RK564AAER27H100	PK564AER27H50 PK564AER27H100	RKD514L-A
	RK596AAER27H50 RK596AAER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-A
	RK564ACER27H50 RK564ACER27H100	PK564AER27H50 PK564AER27H100	RKD514L-C
	RK596ACER27H50 RK596ACER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-C
Harmonic Geared Type with Encoder	RK543AAR27H50 RK543AAR27H100	PK543AWR27H50 PK543AWR27H100	RKD507-A
	RK564AAER27H50 RK564AAER27H100	PK564AER27H50 PK564AER27H100	RKD514L-A
	RK596AAER27H50 RK596AAER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-A
	RK564ACER27H50 RK564ACER27H100	PK564AER27H50 PK564AER27H100	RKD514L-C
	RK596ACER27H50 RK596ACER27H100	PK596AE1R27H50 PK596AE1R27H100	RKD514H-C
	RK543AAR27H50 RK543AAR27H100	PK543AWR27H50 PK543AWR27H100	RKD507-A

Introduction

AC Input Motor & Driver

0.36° / Geared
AR / CSTER

0.36° / Geared
AS / CSTER

0.72° / Geared
RK

0.9° / 1.8° / Geared
UMK

0.36° / Geared
AR / CSTER

0.36° / Geared
ASX / CSTER

DC Input Motor & Driver

0.36° / 0.72° / Geared
CRK

0.9° / 1.8° / Geared
CMK

1.8° / Geared
RBK

0.36°
PK

0.72°
PK

0.9°
PK

1.8°
PK/PV

Geared
PK

Controllers
SCX10
EMP400
/SG8030J

Accessories