Stepping Motors

Stepping Motor and Driver Packages

AC Input

RoHS RoHS-Compliant

5-Phase Stepping Motor and Driver Package

RK Series

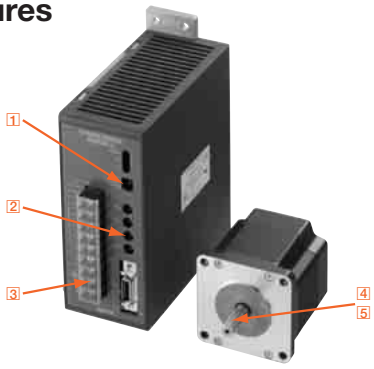
●Additional Information●
Technical reference ➜ Page F-1
Safety standards ➜ Page G-2

The **RK** Series incorporates new functions and state-of-the-art technologies to achieve the ultimate performance of a stepping motor. The series offers various types including a standard type, a terminal box type, and three 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.

c UL us CE

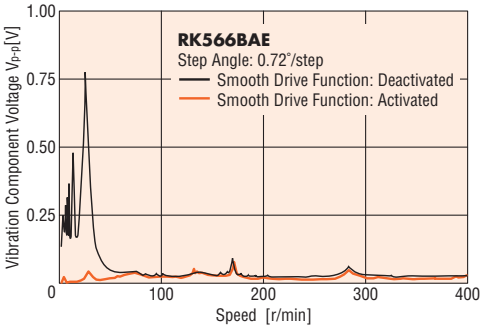
●List of safety standard approved products (Model, Standards, File No., Certification Body)
➜ Page G-11

Features

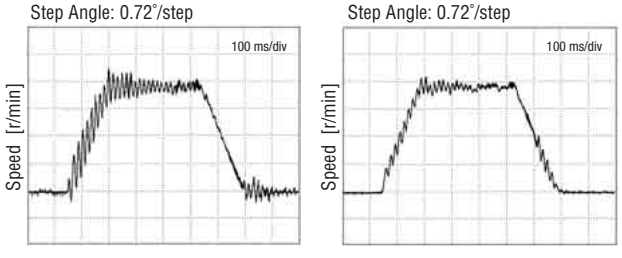


1 Smooth Drive Function

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

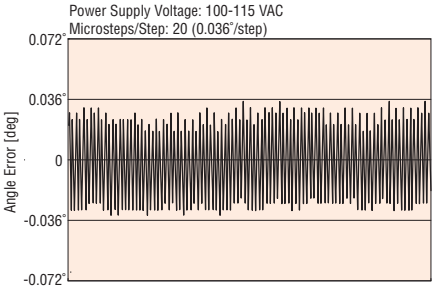
The motor's basic step angle is divided by a maximum of 250 without the use of a reduction mechanism or other mechanical means. 16 resolution levels are available to set the desired resolution. This enables fine positioning and the further reduction of vibration and noise. A motion sequence of "low-speed 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.

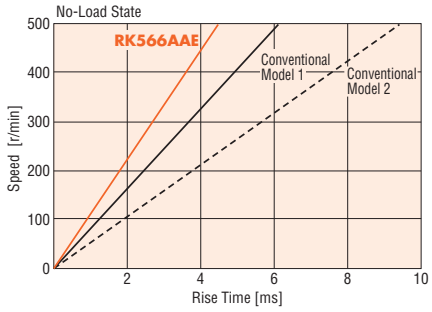
4 Improved Angle Accuracy

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.



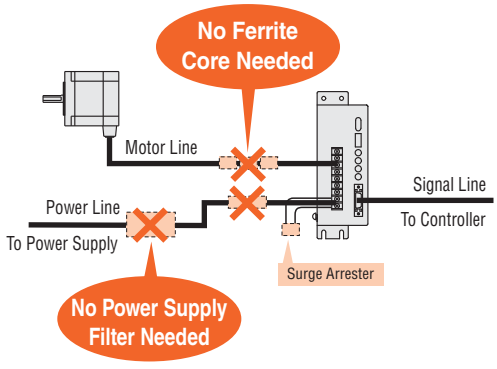
5 Improved Response

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.



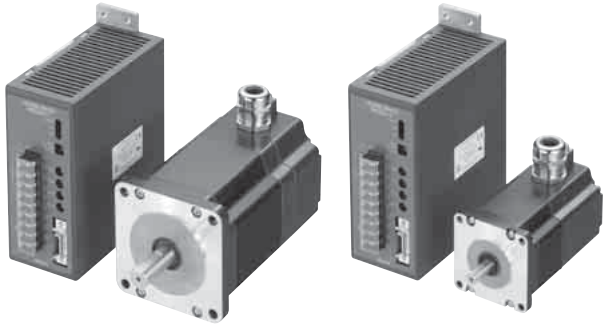
●Protective Earth Terminal

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

●Extended Bearing Life

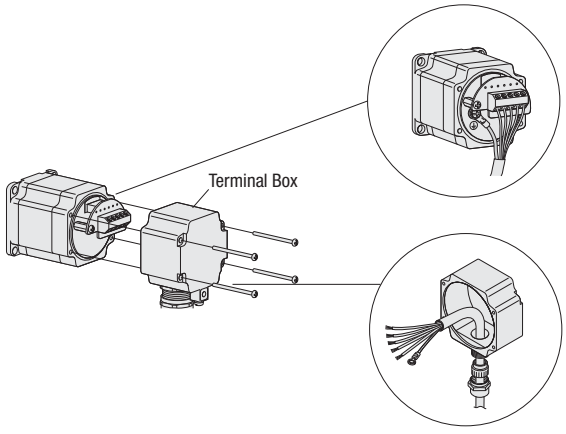
The life of a motor is affected by its bearing. The **RK** Series achieves approximately twice the life of a conventional motor by adopting a modified bearing. [Available only with the standard type with a frame size of 60 mm (2.36 in.) or 85 mm (3.35 in.).]

●The Terminal Box Type Motor Conforms to the IP65 Standard for Ingress Protection against Dust and Water.



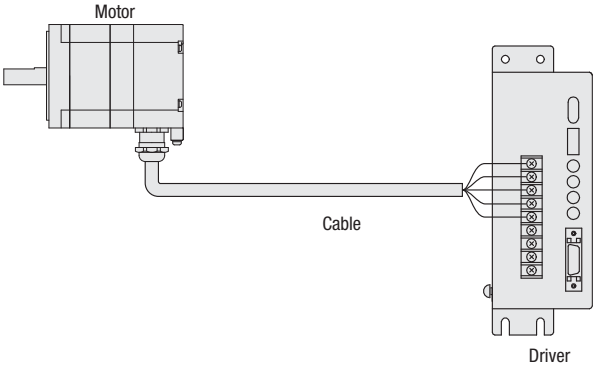
◇Terminal-Block Connection Design

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.



●RoHS RoHS-Compliant

The **RK** Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

●Details of RoHS Directive ➜ Page G-38

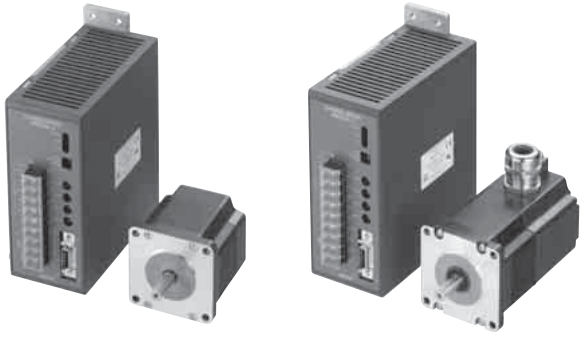
Wide Variety

The **RK** Series offers a range of motor frame sizes depending on the motor type and power supply voltage specification, as shown below.
["□42 (□1.65)" indicates a motor frame size of 42 mm (1.65 in.).]

	Power Supply Voltage	Standard Type	Standard Type Terminal Box	**TH** Geared Type	**PN** Geared Type	Harmonic Geared Type
AC Power Supply **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)
	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)

Standard Type/Standard Type Terminal Box

Easy-to-use standard types offer balanced performance. The terminal box type motor conforms to the IP65 standard for ingress protection against dust and water.



PN Geared Type (Non-backlash)

A high-accuracy geared motor achieves a backlash of 3 arc minutes or less. It also provides high strength and wide gear ratios.

TH Geared Type (Low backlash)

A low-cost geared motor offers low backlash.

Harmonic Geared Type (Non-backlash)

A high-accuracy, backlash-free geared motor adopts a newly developed harmonic gear. It ensures high strength in a compact body.

Characteristics Comparison for Geared Motors

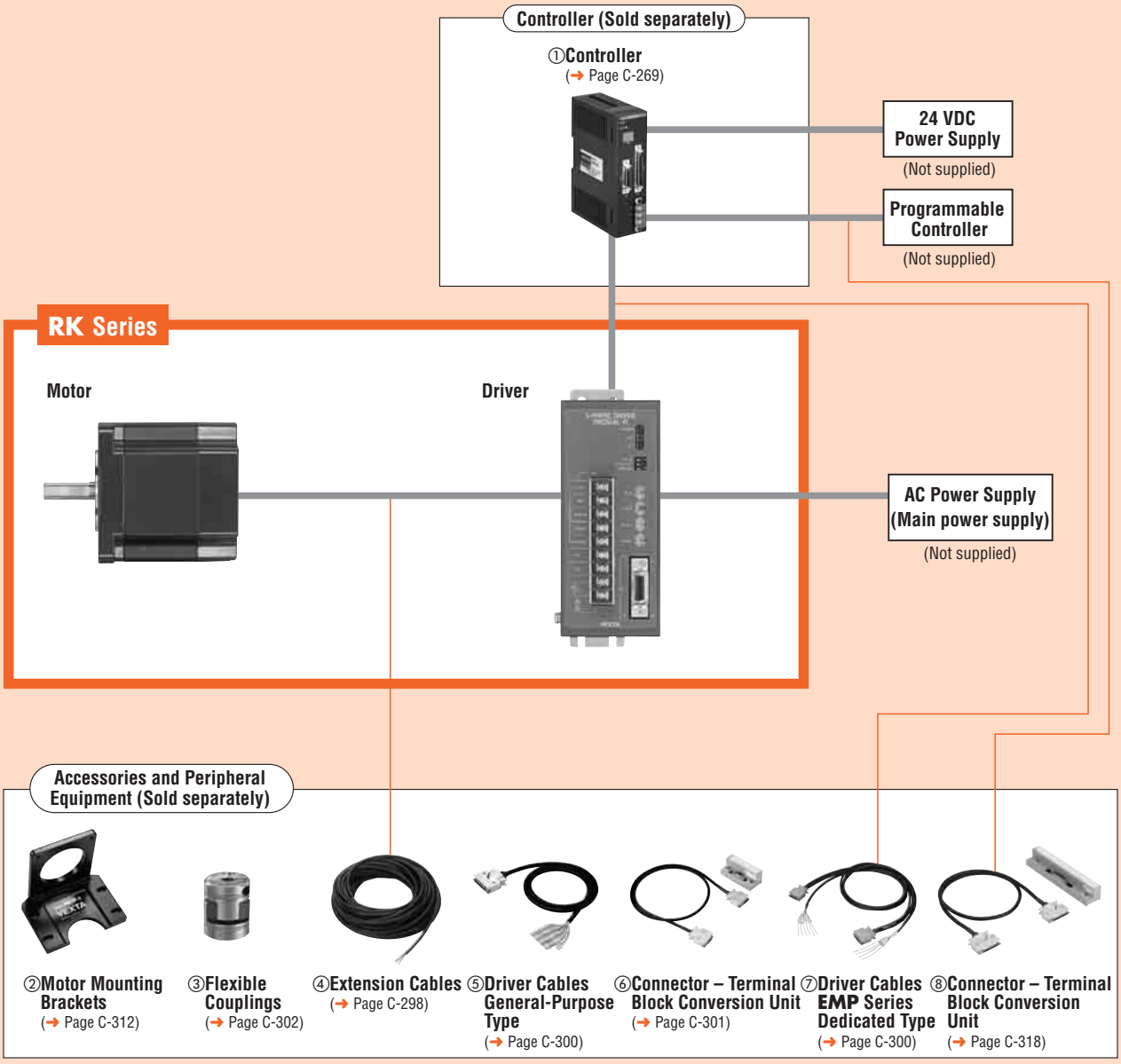
	Geared Type	Features	Permissible Torque/ Maximum Torque [N·m (lb-in)]	Backlash [arc min]	Basic Resolution [deg/step]	Output Shaft Speed [r/min]
Low backlash	 **TH Geared** (Parallel shaft)	· A wide variety of low gear ratios for high-speed operation · Gear ratios: 3.6:1, 7.2:1, 10:1, 20:1, 30:1	12 (106)	45	0.024	500
Non-backlash	 **PN Geared** (Planetary gear)	· High speed (low gear ratios), 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: 5:1, 7.2:1, 10:1, 25:1, 36:1, 50:1	Permissible Torque 37 (320) Maximum Torque 60 (530)	3	0.0144	600
	 **Harmonic Geared** (Harmonic drive)	· High accuracy positioning · High permissible/maximum torque · High gear ratios, high resolution · Centered output shaft · Gear ratios: 50:1, 100:1	Permissible Torque 37 (320) Maximum Torque 55 (480)	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.

System Configuration

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



No.	Product Name	Overview	Page
①	Controller	This controller outputs pulse commands that determine the rotation amount and rotating speed.	C-269
②	Motor Mounting Brackets	Dedicated mounting bracket for the motor.	C-312
③	Flexible Couplings	Coupling that connects the motor shaft to the driven shaft.	C-302
④	Extension Cables	Cable for extending the wiring distance between the motor and driver [5 to 20 m (16.4 to 65.6 ft.)].	C-298
⑤	Driver Cables General-Purpose Type	General-purpose cable for connecting the driver and controller [1 m, 2 m (3.3 ft., 6.6 ft.)].	C-300
⑥	Connector – Terminal Block Conversion Unit	Set of terminal block and cable (**CC20T1**) for connecting the driver and controller [1 m (3.3 ft.)].	C-301
⑦	Driver Cables **EMP** Series Dedicated Type	Dedicated cable with connector for connecting the driver and **EMP** Series controller [1 m, 2 m (3.3 ft., 6.6 ft.)].	C-300
⑧	Connector – Terminal Block Conversion Unit	Set of terminal block and cable (**CC50T1**) for connecting the **EMP** Series controller and host controller [1 m (3.3 ft.)].	C-318

●**Example of System Configuration**

(Sold separately)

RK Series		Controller	Extension Cable [5 m (16.4 ft.)]	Motor Mounting Bracket	Flexible Coupling	Driver 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.

Product Number Code

RK 5 9 13 A A T

① ② ③ ④ ⑤ ⑥ ⑦

RK 5 6 6 B A E - N 5

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

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	Blank: Standard Type **T**: **TH** Geared Type **N**: **PN** Geared Type **H**: Harmonic Geared Type
⑨	Gear Ratio	

Product Line

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**
	RK596AAE	**RK596BAE**
	RK599AAE	**RK599BAE**
	RK5913AAE	**RK5913BAE**
Single-Phase 200-230 VAC	**RK564ACE**	**RK564BCE**
	RK566ACE	**RK566BCE**
	RK569ACE	**RK569BCE**
	RK596ACE	**RK596BCE**
	RK599ACE	**RK599BCE**
	RK5913ACE	**RK5913BCE**

Standard Type Terminal Box

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

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**

The following items are included in each product.

Motor, Parallel Key*, Driver, Connector for Input/Output Signal, Operating Manual

*Only for the products with a key slot on the output shaft

●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**
	RK596AAE-H100	**RK596BAE-H100**
Single-Phase 200-230 VAC	**RK564ACE-H50**	**RK564BCE-H50**
	RK564ACE-H100	**RK564BCE-H100**
	RK596ACE-H50	**RK596BCE-H50**
	RK596ACE-H100	**RK596BCE-H100**

The following items are included in each product.

Motor, Parallel Key*, Driver, Connector for Input/Output Signal, Operating Manual

*Only for the products with a key slot on the output shaft

Standard Type Motor Frame Size 42 mm (1.65 in.)

Specifications RoHS

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

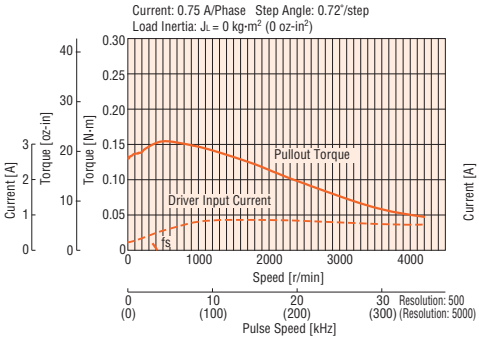
Model	Single-Phase 100-115 VAC		RK543AA	RK544AA	RK545AA
		Single Shaft	RK543BA	RK544BA	RK545BA
		Double Shaft			
Maximum Holding Torque		N·m (oz-in)	0.13 (18.4)	0.18 (25)	0.24 (34)
Rotor Inertia J		kg·m² (oz-in²)	35×10⁻⁷ (0.191)	54×10⁻⁷ (0.3)	68×10⁻⁷ (0.37)
Rated Current		A/Phase	0.75		
Basic Step Angle			0.72°		
Power Source			Single-Phase 100-115 VAC±15% 50/60 Hz 1 A		
Excitation Mode			Microstep		
Mass		Motor kg (lb.)	0.25 (0.55)	0.3 (0.66)	0.4 (0.88)
		Driver kg (lb.)	0.4 (0.88)		
Dimension No.		Motor	1		
		Driver	15		

How to read specifications table ➜ Page C-11

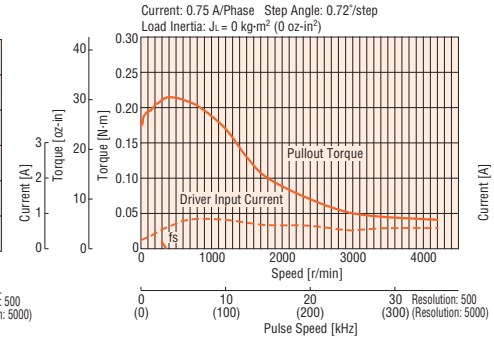
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

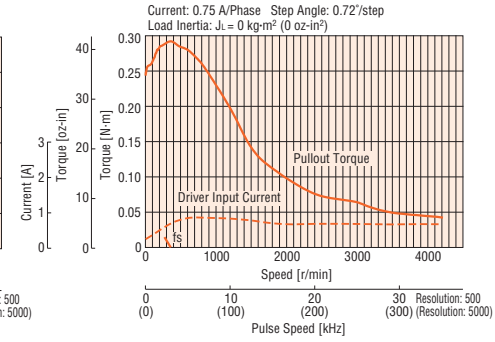
RK543AA/RK543BA



RK544AA/RK544BA



RK545AA/RK545BA



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

Notes:

● Pay attention to heat dissipation from 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 insulation Class A.]

● The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

Standard Type Motor Frame Size 60 mm (2.36 in.), 85 mm (3.35 in.)

Specifications RoHS

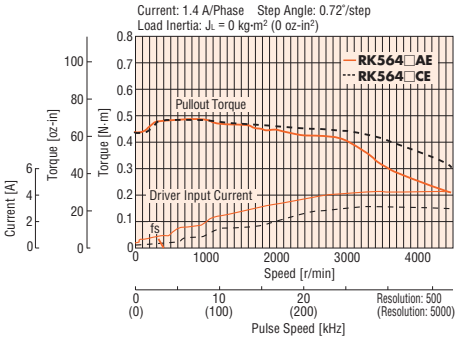
Model	Single-Phase 100-115 VAC	Single Shaft	RK564AAE	RK566AAE	RK569AAE	RK596AAE	RK599AAE	RK5913AAE
		Double Shaft	RK564BAE	RK566BAE	RK569BAE	RK596BAE	RK599BAE	RK5913BAE
	Single-Phase 200-230 VAC	Single Shaft	RK564ACE	RK566ACE	RK569ACE	RK596ACE	RK599ACE	RK5913ACE
		Double Shaft	RK564BCE	RK566BCE	RK569BCE	RK596BCE	RK599BCE	RK5913BCE
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)
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					
Mass		Motor kg (lb.)	0.6 (1.3)	0.8 (1.8)	1.3 (2.9)	1.7 (3.7)	2.8 (6.2)	3.8 (8.4)
		Driver kg (lb.)	0.85 (1.9)					
Dimension No.		Motor	2			3		
		Driver	16					

How to read specifications table ➜ Page C-11

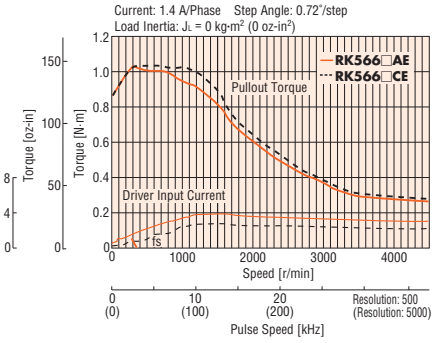
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

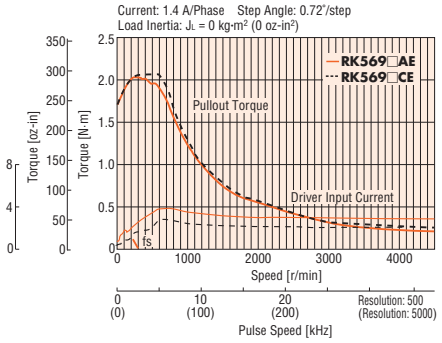
RK564□AE/RK564□CE



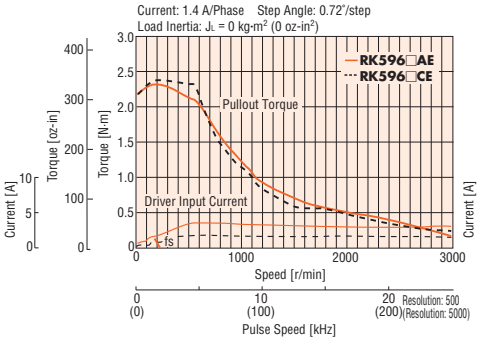
RK566□AE/RK566□CE



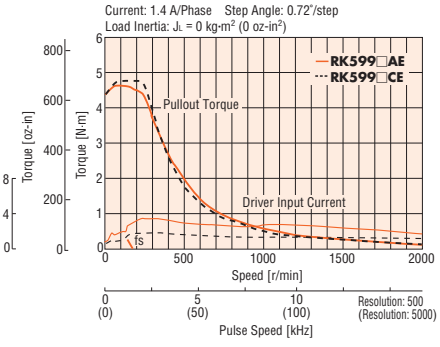
RK569□AE/RK569□CE



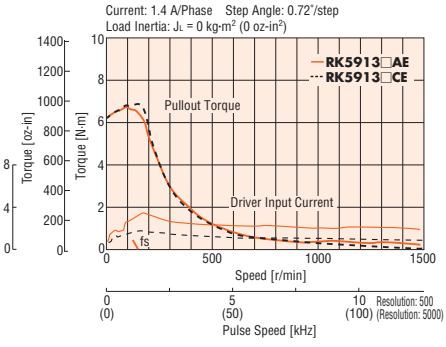
RK596□AE/RK596□CE



RK599□AE/RK599□CE



RK5913□AE/RK5913□CE



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

Standard Type Terminal Box Motor Frame Size 60 mm (2.36 in.), 85 mm (3.35 in.)

Specifications RoHS

Model		RK564AAT	RK566AAT	RK569AAT	RK596AAT	RK599AAT	RK5913AAT
	Single-Phase 200-230 VAC	RK564ACT	RK566ACT	RK569ACT	RK596ACT	RK599ACT	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)
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					
Mass	Motor kg (lb.)	0.8 (1.8)	1.1 (2.4)	1.6 (3.5)	2.2 (4.8)	3.3 (7.3)	4.4 (9.7)
	Driver kg (lb.)	0.85 (1.9)					
Dimension No.	Motor	4			5		
	Driver	16					

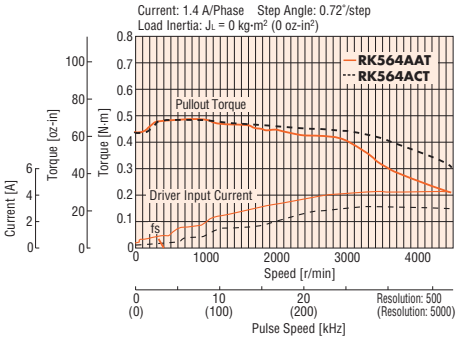
How to read specifications table ➜ Page C-11

*Excluding the gap between the shaft and the flange

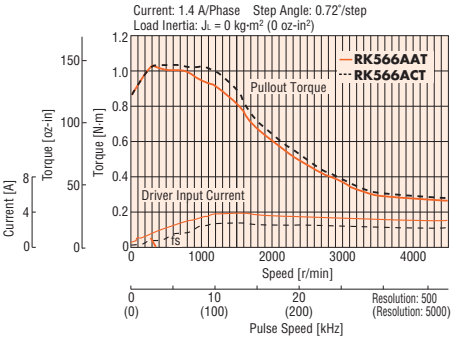
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

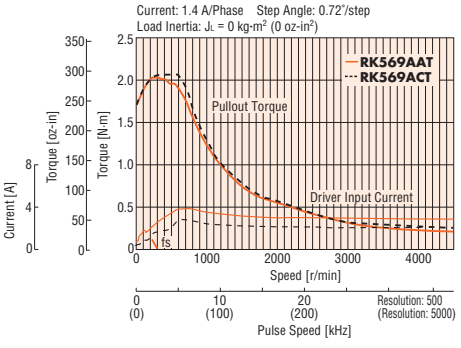
RK564AAT/RK564ACT



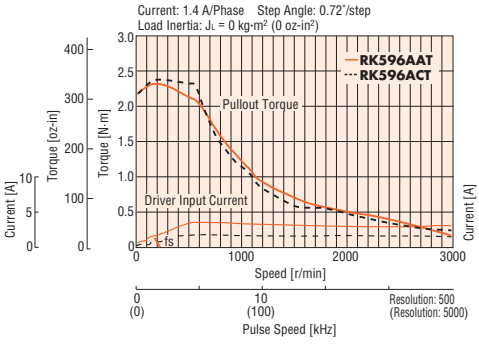
RK566AAT/RK566ACT



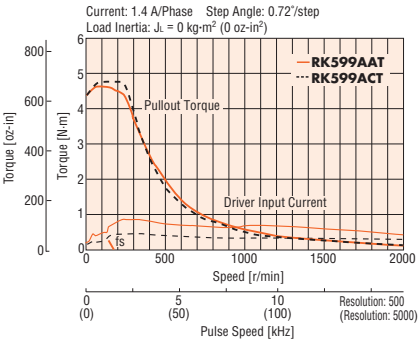
RK569AAT/RK569ACT



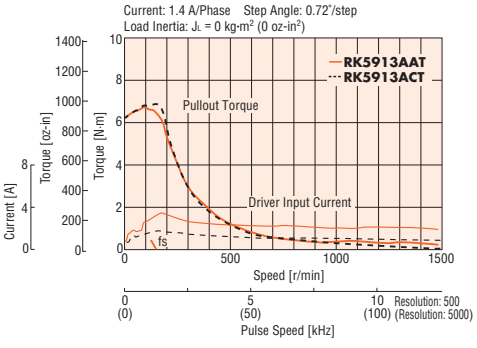
RK596AAT/RK596ACT



RK599AAT/RK599ACT



RK5913AAT/RK5913ACT



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

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Specifications

●With the **RK54**□ 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
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			3.6:1	7.2:1	10:1	20:1	30:1
Permissible Torque		N·m (lb-in)	0.35 (3)	0.7 (6.1)	1 (8.8)	1.5 (13.2)	
Backlash		arc minute (degrees)	45 (0.75°)	25 (0.417°)		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				
Mass		Motor kg (lb.)	0.35 (0.77)				
		Driver kg (lb.)	0.4 (0.88)				
Dimension No.		Motor	6				
		Driver	15				

How to read specifications table ➜ Page C-11

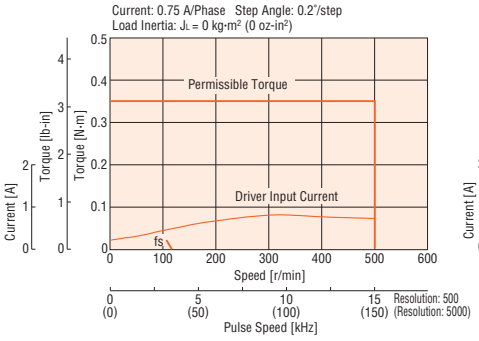
Note:

● Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 3.6:1, 7.2:1 and 10:1. It is opposite for 20:1 and 30:1 gear ratios.

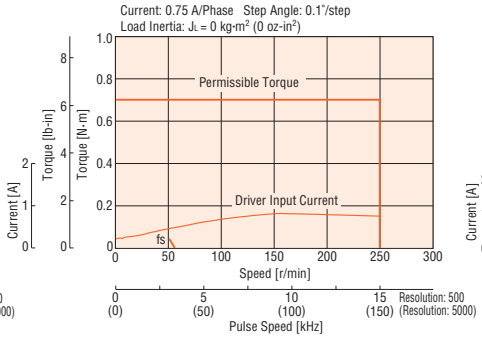
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

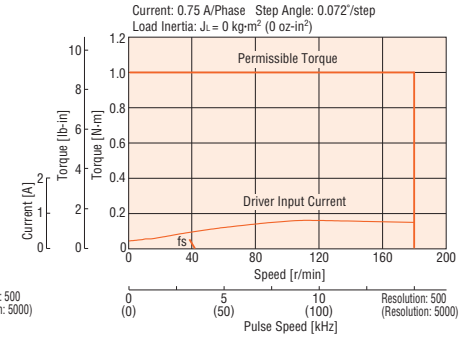
RK543AA-T3.6/RK543BA-T3.6



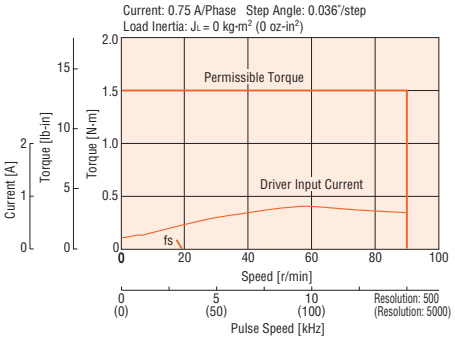
RK543AA-T7.2/RK543BA-T7.2



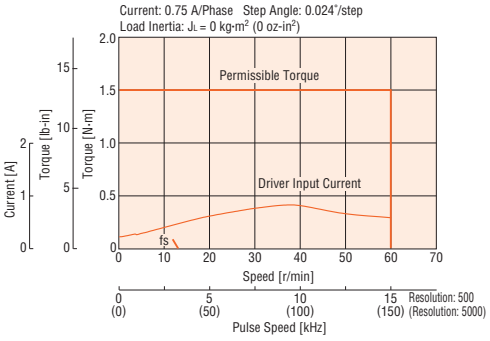
RK543AA-T10/RK543BA-T10



RK543AA-T20/RK543BA-T20



RK543AA-T30/RK543BA-T30



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

Notes:

● Pay attention to heat dissipation from 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 insulation Class A.]

● The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Specifications RoHS

Model			RK564AAE-T3.6	RK564AAE-T7.2	RK564AAE-T10	RK564AAE-T20	RK564AAE-T30
	Single-Phase 100-115 VAC	Double Shaft	RK564BAE-T3.6	RK564BAE-T7.2	RK564BAE-T10	RK564BAE-T20	RK564BAE-T30
	Single-Phase 200-230 VAC	Single Shaft	RK564ACE-T3.6	RK564ACE-T7.2	RK564ACE-T10	RK564ACE-T20	RK564ACE-T30
		Double Shaft	RK564BCE-T3.6	RK564BCE-T7.2	RK564BCE-T10	RK564BCE-T20	RK564BCE-T30
Maximum Holding Torque		N·m (lb-in)	1.25 (11)	2.5 (22)	3 (26)	3.5 (30)	4 (35)
Rotor Inertia J		kg·m² (oz-in²)	175×10⁻⁷ (0.96)				
Rated Current		A/Phase	1.4				
Basic Step Angle			0.2°	0.1°	0.072°	0.036°	0.024°
Gear Ratio			3.6:1	7.2:1	10:1	20:1	30:1
Permissible Torque		N·m (lb-in)	1.25 (11)	2.5 (22)	3 (26)	3.5 (30)	4 (35)
Backlash		arc minute (degrees)	35 (0.584°)	15 (0.25°)		10 (0.167°)	
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% 50/60 Hz 3.5 A				
Excitation Mode			Microstep				
Mass	Motor	kg (lb.)	0.95 (2.1)				
	Driver	kg (lb.)	0.85 (1.9)				
Dimension No.	Motor		7				
	Driver		16				

How to read specifications table ➜ Page C-11

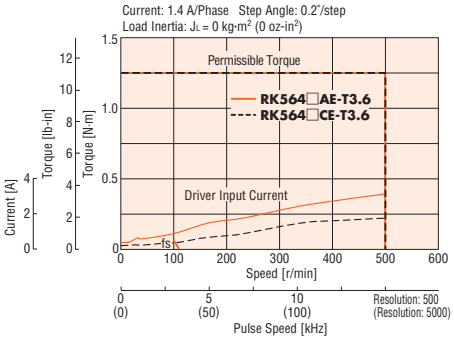
Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 3.6:1, 7.2:1 and 10:1. It is opposite for 20:1 and 30:1 gear ratios.

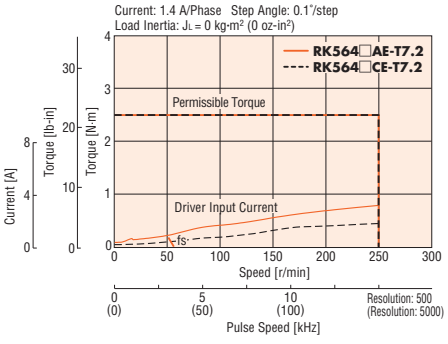
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

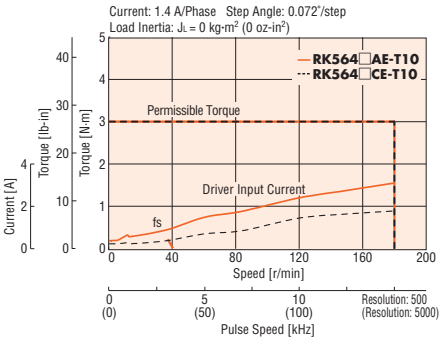
RK564□AE-T3.6/RK564□CE-T3.6



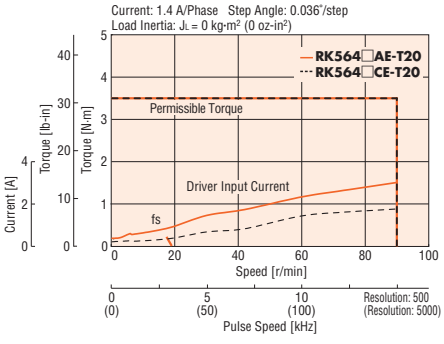
RK564□AE-T7.2/RK564□CE-T7.2



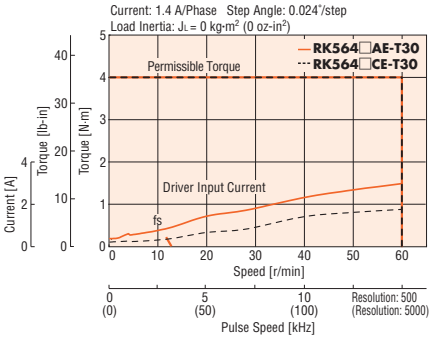
RK564□AE-T10/RK564□CE-T10



RK564□AE-T20/RK564□CE-T20



RK564□AE-T30/RK564□CE-T30



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Specifications RoHS

Model							
Single-Phase 100-115 VAC	Single Shaft	RK596AAE-T3.6	RK596AAE-T7.2	RK596AAE-T10	RK596AAE-T20	RK596AAE-T30
	Double Shaft	RK596BAE-T3.6	RK596BAE-T7.2	RK596BAE-T10	RK596BAE-T20	RK596BAE-T30
Single-Phase 200-230 VAC	Single Shaft	RK596ACE-T3.6	RK596ACE-T7.2	RK596ACE-T10	RK596ACE-T20	RK596ACE-T30
	Double Shaft	RK596BCE-T3.6	RK596BCE-T7.2	RK596BCE-T10	RK596BCE-T20	RK596BCE-T30
Maximum Holding Torque	N·m (lb-in)	4.5 (39)	9 (79)		12 (106)	
Rotor Inertia J	kg·m² (oz-in²)	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		3.6:1	7.2:1	10:1	20:1	30:1
Permissible Torque	N·m (lb-in)	4.5 (39)	9 (79)		12 (106)	
Backlash	arc minute (degrees)	25 (0.417°)	15 (0.25°)		10 (0.167°)	
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 $^{+10\%}_{-15\%}$ 50/60 Hz 3.5 A				
Excitation Mode		Microstep				
Mass	Motor kg (lb.)	2.85 (6.3)				
	Driver kg (lb.)	0.85 (1.9)				
Dimension No.	Motor	8				
	Driver	16				

How to read specifications table ➜ Page C-11

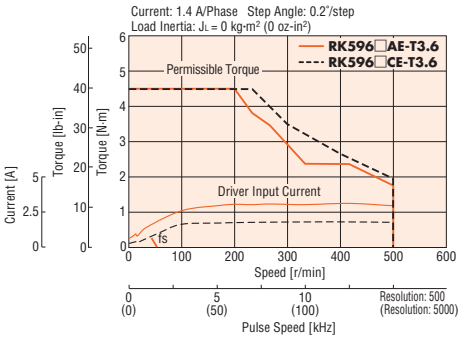
Note:

- Direction of rotation of the motor and that of the gear output shaft are the same for the gear ratios 3.6:1, 7.2:1 and 10:1. It is opposite for 20:1 and 30:1 gear ratios.

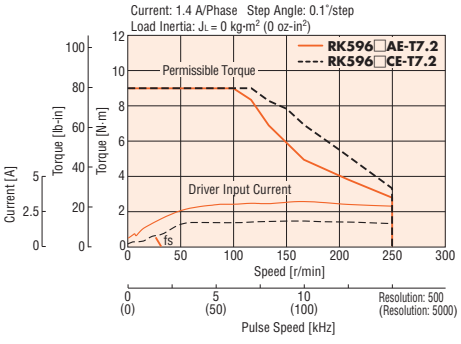
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

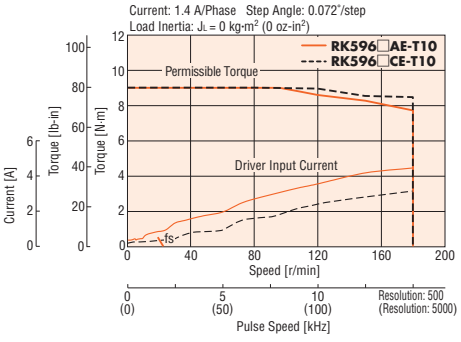
RK596□AE-T3.6/RK596□CE-T3.6



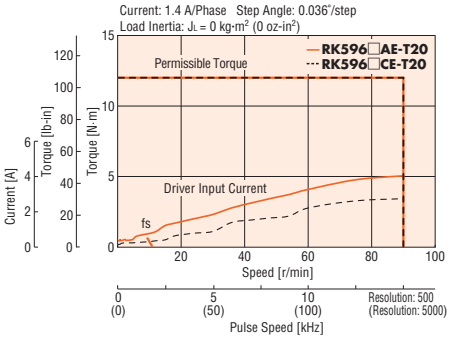
RK596□AE-T7.2/RK596□CE-T7.2



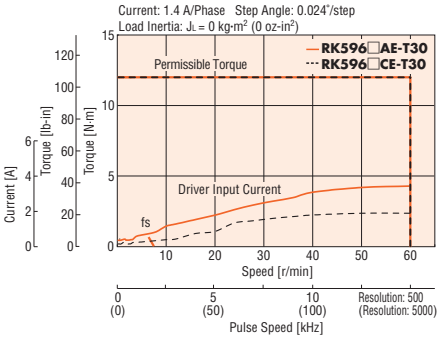
RK596□AE-T10/RK596□CE-T10



RK596□AE-T20/RK596□CE-T20



RK596□AE-T30/RK596□CE-T30



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Specifications RoHS

cULus CE ●With the **RK54**□ type, only the driver conforms to the CSA Standards.

Model Single-Phase 100-115 VAC		Single Shaft / Double Shaft	RK544AA-N5 / RK544BA-N5	RK544AA-N7.2 / RK544BA-N7.2	RK544AA-N10 / 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			5:1	7.2:1	10:1
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)
Backlash		arc minute (degrees)	2 (0.034°)		
Angular Transmission Error		arc minute (degrees)	6 (0.1°)		
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		
Mass	Motor	kg (lb.)	0.56 (1.23)		
	Driver	kg (lb.)	0.4 (0.88)		
Dimension No.	Motor		9		
	Driver		15		

How to read specifications table ➜ Page C-11

*The value of maximum torque is for gear. For output torque for geared motor, refer to the speed – torque characteristics.

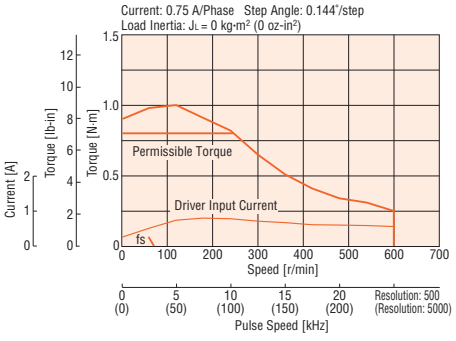
Note:

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

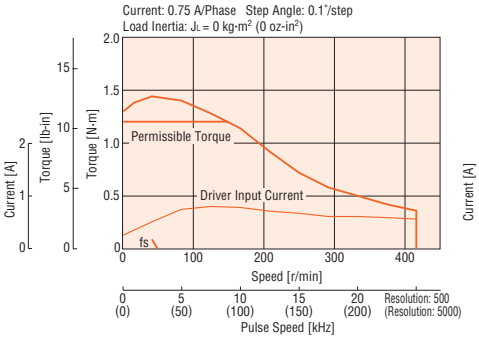
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

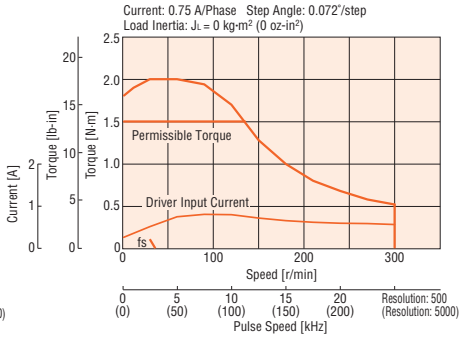
RK544AA-N5/RK544BA-N5



RK544AA-N7.2/RK544BA-N7.2



RK544AA-N10/RK544BA-N10



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

Notes:

● Pay attention to heat dissipation from 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 insulation Class A.]

● The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Specifications RoHS

Model								
Single-Phase 100-115 VAC	Single Shaft	RK566AAE-N5	RK566AAE-N7.2	RK566AAE-N10	RK564AAE-N25	RK564AAE-N36	RK564AAE-N50
	Double Shaft	RK566BAE-N5	RK566BAE-N7.2	RK566BAE-N10	RK564BAE-N25	RK564BAE-N36	RK564BAE-N50
Single-Phase 200-230 VAC	Single Shaft	RK566ACE-N5	RK566ACE-N7.2	RK566ACE-N10	RK564ACE-N25	RK564ACE-N36	RK564ACE-N50
	Double Shaft	RK566BCE-N5	RK566BCE-N7.2	RK566BCE-N10	RK564BCE-N25	RK564BCE-N36	RK564BCE-N50

Maximum Holding Torque	N·m (lb-in)	3.5 (30)	4 (35)	5 (44)	8 (70)		
Rotor Inertia J	kg·m² (oz-in²)	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		5:1	7.2:1	10:1	25:1	36:1	50:1
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)	
Backlash	arc minute (degrees)	2 (0.034°)			3 (0.05°)		
Angular Transmission Error	arc minute (degrees)	5 (0.084°)					
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 $^{+10\%}_{-15\%}$ 50/60 Hz 3.5 A					
Excitation Mode		Microstep					
Mass	Motor kg (lb.)	1.5 (3.3)					
	Driver kg (lb.)	0.85 (1.9)					
Dimension No.	Motor	10					
	Driver	16					

How to read specifications table ➜ Page C-11

*The value of maximum torque is for gear. For output torque for geared motor, refer to the speed – torque characteristics.

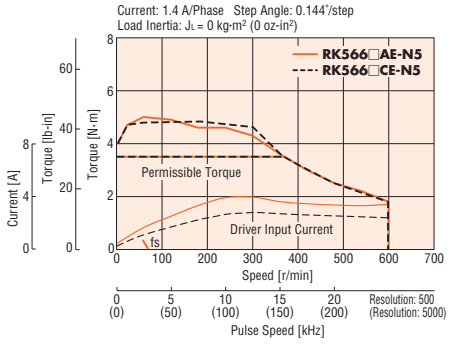
Note:

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

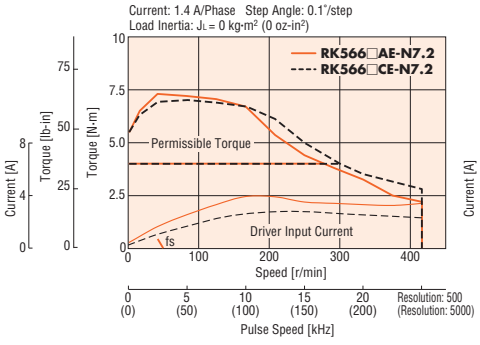
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

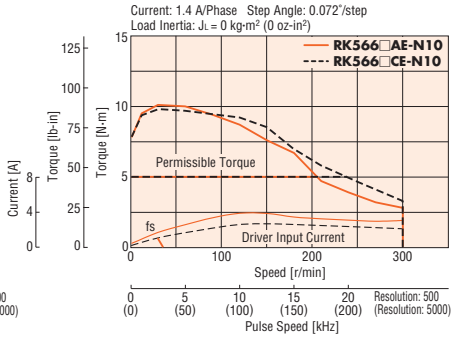
RK566□AE-N5/RK566□CE-N5



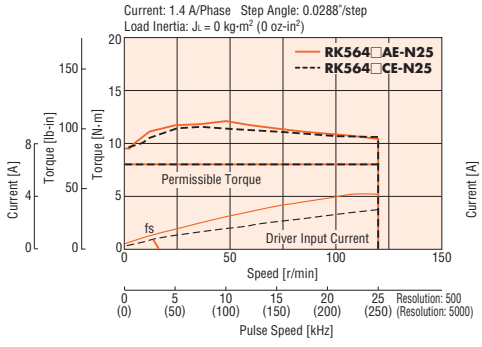
RK566□AE-N7.2/RK566□CE-N7.2



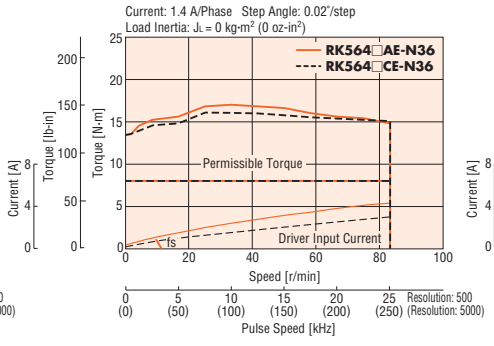
RK566□AE-N10/RK566□CE-N10



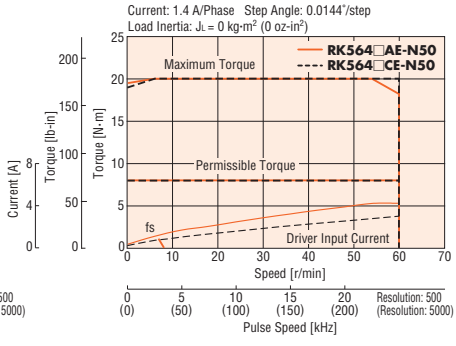
RK564□AE-N25/RK564□CE-N25



RK564□AE-N36/RK564□CE-N36



RK564□AE-N50/RK564□CE-N50



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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·m² (oz-in²)	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			5:1	7.2:1	10:1	25:1	36:1	50:1
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)	
Backlash		arc minute (degrees)	2 (0.034°)			3 (0.05°)		
Angular Transmission Error		arc minute (degrees)	4 (0.067°)					
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% −15% 50/60 Hz 3.5 A					
Excitation Mode			Microstep					
Mass		Motor kg (lb.)	5 (11)			4.7 (10.3)		
		Driver kg (lb.)	0.85 (1.9)					
Dimension No.		Motor	15					
		Driver	15					

How to read specifications table ➜ Page C-11

*The value of maximum torque is for gear. For output torque for geared motor, refer to the speed – torque characteristics.

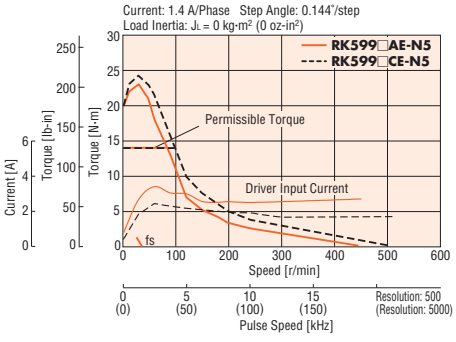
Note:

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

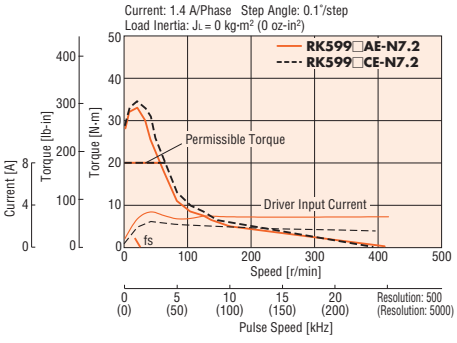
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

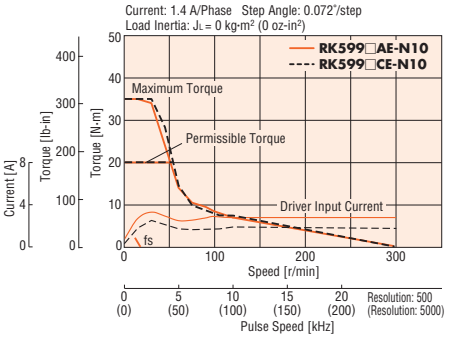
RK599□AE-N5/RK599□CE-N5



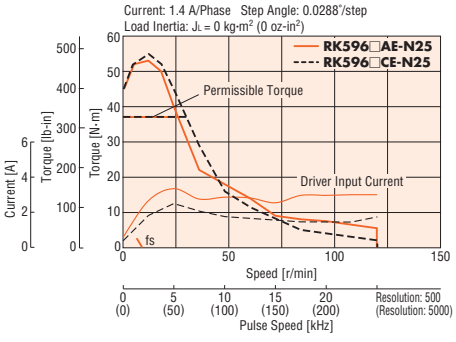
RK599□AE-N7.2/RK599□CE-N7.2



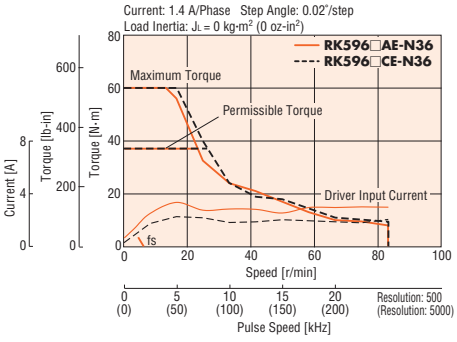
RK599□AE-N10/RK599□CE-N10



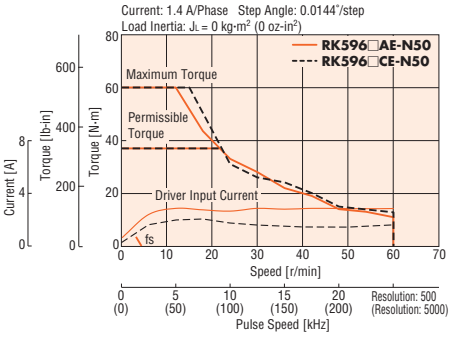
RK596□AE-N25/RK596□CE-N25



RK596□AE-N36/RK596□CE-N36



RK596□AE-N50/RK596□CE-N50



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class A.]
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

Model			RK543AA-H50	RK543AA-H100	RK564AAE-H50	RK564AAE-H100	RK596AAE-H50	RK596AAE-H100
	Single-Phase 100-115 VAC	Double Shaft	RK543BA-H50	RK543BA-H100	RK564BAE-H50	RK564BAE-H100	RK596BAE-H50	RK596BAE-H100
	Single-Phase 200-230 VAC	Single Shaft	–	–	RK564ACE-H50	RK564ACE-H100	RK596ACE-H50	RK596ACE-H100
		Double Shaft	–	–	RK564BCE-H50	RK564BCE-H100	RK596BCE-H50	RK596BCE-H100
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·m² (oz-in²)	52×10^{-7} (0.28)		210×10^{-7} (1.15)		1600×10^{-7} (8.8)	
Rated Current		A/Phase	0.75		1.4			
Basic Step Angle			0.0144°	0.0072°	0.0144°	0.0072°	0.0144°	0.0072°
Gear Ratio			50:1	100:1	50:1	100:1	50:1	100:1
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)
Lost Motion (Load torque)		arc minute	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					
Mass	Motor	kg (lb.)	0.46 (1.01)		1.08 (2.4)		3.7 (8.1)	
	Driver	kg (lb.)	0.4 (0.88)		0.85 (1.9)			
Dimension No.	Motor		12		13		14	
	Driver		15		16			

How to read specifications table ➜ Page C-11

*The value of maximum torque is for gear. For output torque for geared motor, refer to the speed – torque characteristics.

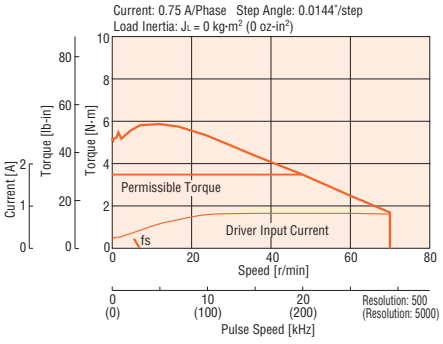
Notes:

- 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.

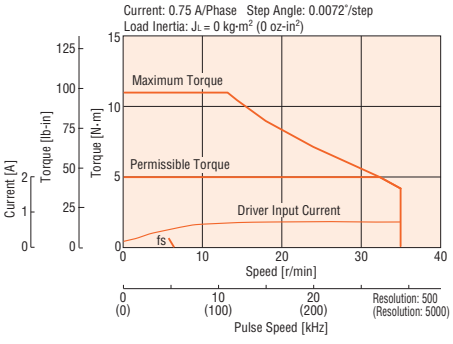
Speed – Torque Characteristics

How to read speed – torque characteristics ➜ Page C-12

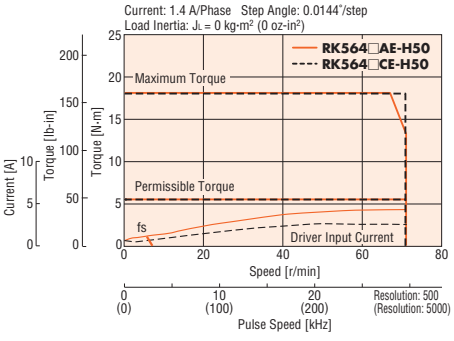
RK543□A-H50



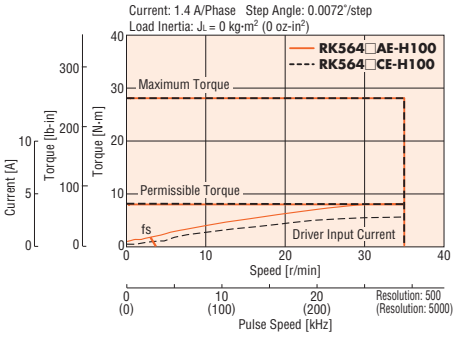
RK543□A-H100



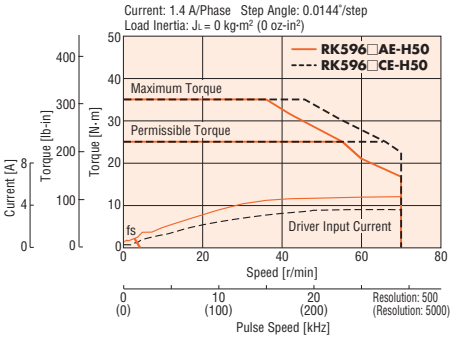
RK564□AE-H50/RK564□CE-H50



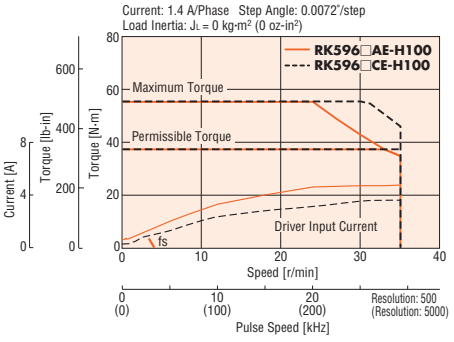
RK564□AE-H100/RK564□CE-H100



RK596□AE-H50/RK596□CE-H50



RK596□AE-H100/RK596□CE-H100



- Enter **A** (single shaft) or **B** (double shaft) in the box (□) within the model name.
- The pulse input circuit responds to approximately 200 kHz with a pulse duty of 50%.

Notes:

- Pay attention to heat dissipation from 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 insulation Class 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).
- The driver's automatic current cutback function at motor standstill reduces maximum holding torque by approximately 50%.

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

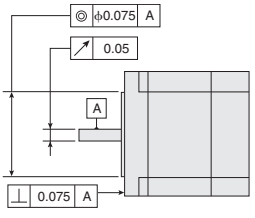
Item		Motor	Driver
Insulation Class		Class B [130°C (266°F)] [Recognized as Class A 105°C (221°F) by UL Standards]	–
Insulation Resistance		100 MΩ or more when 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.	100 MΩ or more when 500 VDC megger 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): Standard type, **TH**, **PN** geared type 0~+40°C (+32~+104°F) (non-freezing): Harmonic geared type	0~+50°C (+32~+122°F) (non-freezing)
	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.

Permissible Overhung Load and Permissible Thrust Load

Unit = N (lb.)

Type	Model	Gear Ratio	Permissible Overhung Load					Permissible Thrust Load
			Distance from Shaft End					
			0 mm (0 in.)	5 mm (0.2 in.)	10 mm (0.39 in.)	15 mm (0.59 in.)	20 mm (0.79 in.)	
Standard Type Standard Type Terminal Box	**RK543□A** **RK544□A** **RK545□A**	–	20 (4.5)	25 (5.6)	34 (7.6)	52 (11.7)	–	The permissible thrust load shall be no greater than the motor mass.
	RK564□□E, RK564A□T **RK566□□E, RK566A□T** **RK569□□E, RK569A□T**	–	63 (14.1)	75 (16.8)	95 (21)	130 (29)	190 (42)	
	RK596□□E, RK596A□T **RK599□□E, RK599A□T** **RK5913□□E, RK5913A□T**	–	260 (58)	290 (65)	340 (76)	390 (87)	480 (108)	
TH Geared Type	**RK543□A-T■**	**3.6, 7.2, 10, 20, 30**	10 (2.2)	14 (3.1)	20 (4.5)	30 (6.7)	–	15 (3.3)
	RK564□□E-T■		70 (15.7)	80 (18)	100 (22)	120 (27)	150 (33)	40 (9)
	RK596□□E-T■		220 (49)	250 (56)	300 (67)	350 (78)	400 (90)	100 (22)
PN Geared Type	**RK544□A-N■**	**5, 7.2, 10**	100 (22)	120 (27)	150 (33)	190 (42)	–	100 (22)
	RK566□□E-N5	**5**	200 (45)	220 (49)	250 (56)	280 (63)	320 (72)	
	RK566□□E-N■	**7.2, 10**	250 (56)	270 (60)	300 (67)	340 (76)	390 (87)	
	RK564□□E-N■	**25, 36, 50**	330 (74)	360 (81)	400 (90)	450 (101)	520 (117)	
	RK599□□E-N5	**5**	480 (108)	520 (117)	550 (123)	580 (130)	620 (139)	300 (67)
	RK599□□E-N■	**7.2, 10**	480 (108)	540 (121)	600 (135)	680 (153)	790 (177)	
	RK596□□E-N25	**25**	850 (191)	940 (210)	1050 (230)	1110 (240)	1190 (260)	
	RK596□□E-N36	**36**	930 (200)	1030 (230)	1150 (250)	1220 (270)	1300 (290)	
	RK596□□E-N50	**50**	1050 (230)	1160 (260)	1300 (290)	1380 (310)	1490 (330)	
Harmonic Geared Type	**RK543□A-H■**	**50, 100**	180 (40)	220 (49)	270 (60)	360 (81)	510 (114)	220 (49)
	RK564□□E-H■	**50, 100**	320 (72)	370 (83)	440 (99)	550 (123)	720 (162)	450 (101)
	RK596□□E-H■	**50, 100**	1090 (204)	1150 (250)	1230 (270)	1310 (290)	1410 (310)	1300 (290)

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

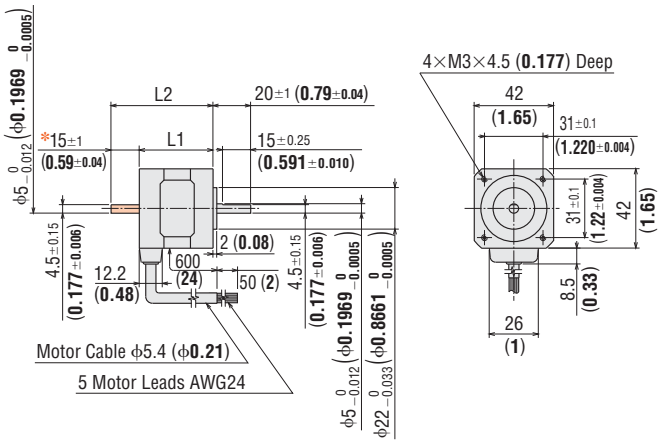
Dimensions Unit = mm (in.)

Motor

◇Standard Type

1 □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)		

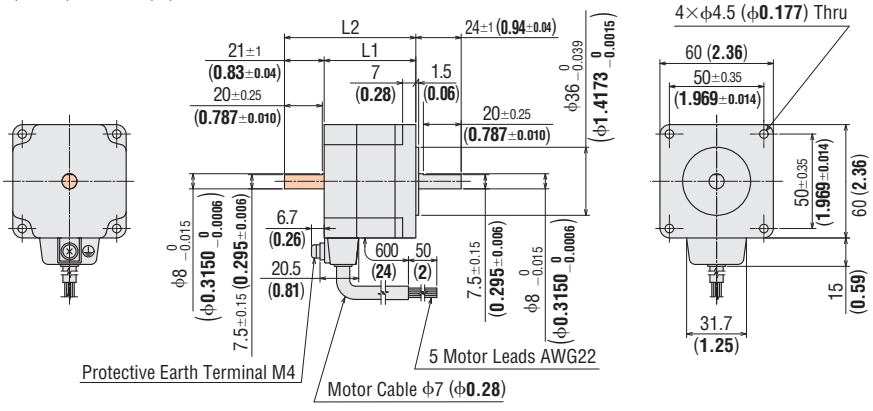


*The length of machining on the double shaft model is 15±0.25 (0.591±0.010).

2 □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.

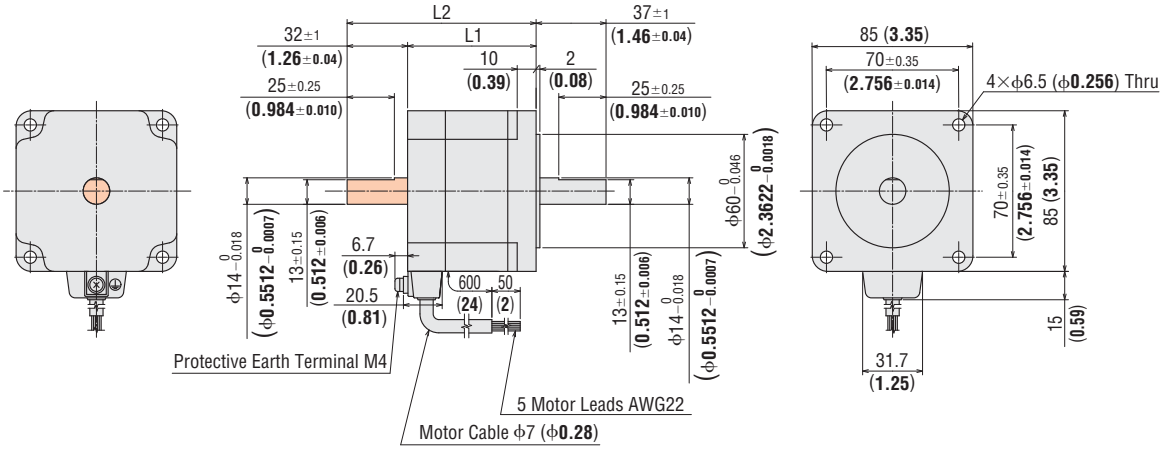


● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (▭) areas.

3 □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)		

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



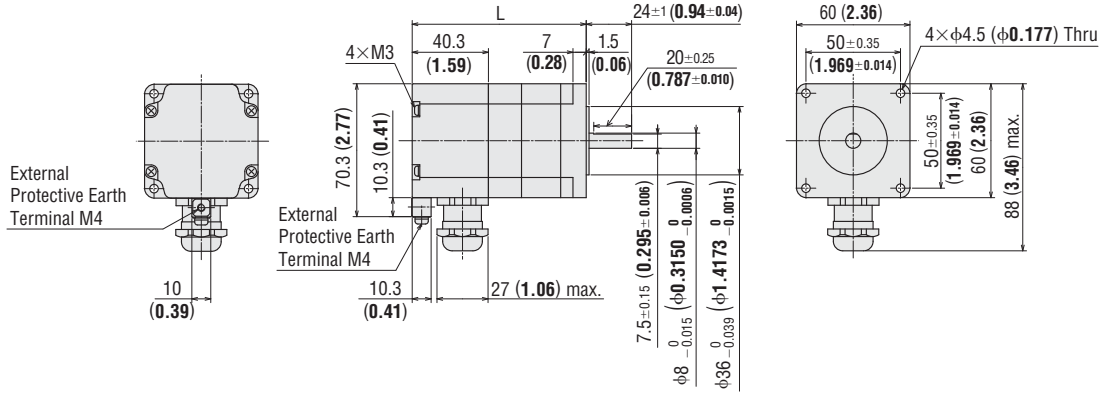
● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (▭) areas.

◇Standard Type Terminal Box

4 □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

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

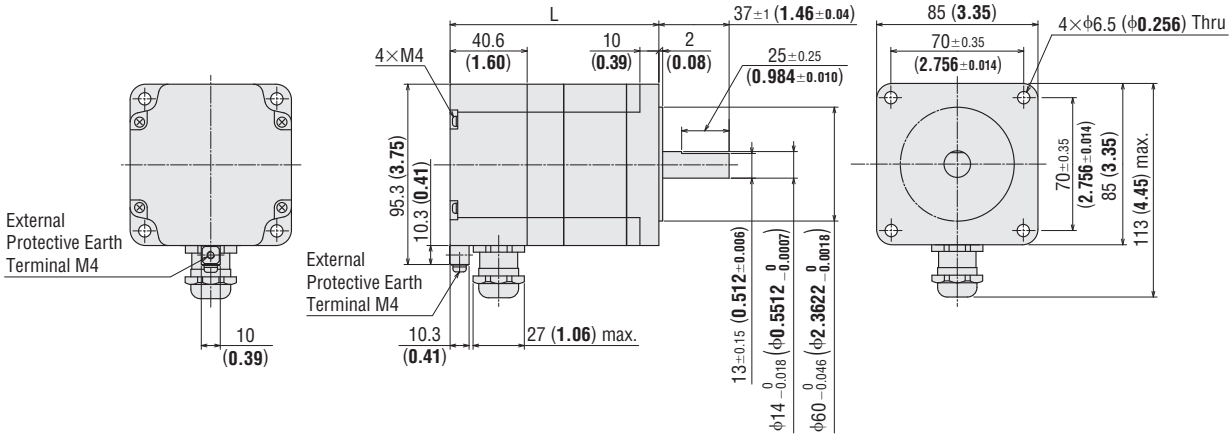


● Use cable (VCT) with a diameter of φ7~φ13 mm (φ0.28~φ0.51 in.). A motor cable is available as an accessory (sold separately). ➜ Page C-298

5 □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.



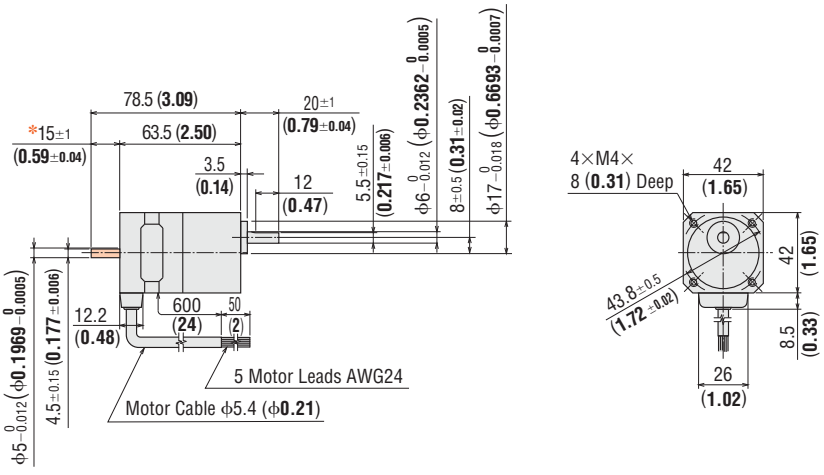
● Use cable (VCT) with a diameter of φ7~φ13 mm (φ0.28~φ0.51 in.). A motor cable is available as an accessory (sold separately). ➜ Page C-298

◇TH Geared Type

6 □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.



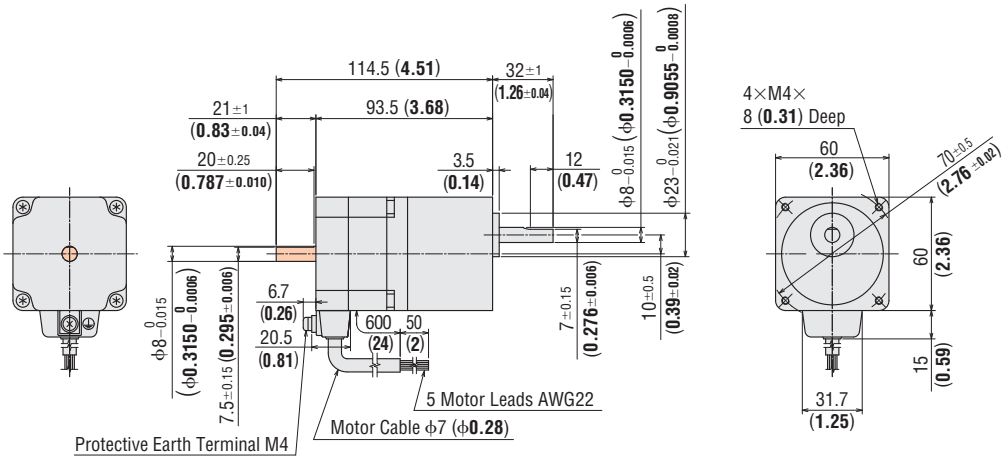
*The length of machining on the double shaft model is 15±0.25 (0.591±0.010).

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

7 □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□			

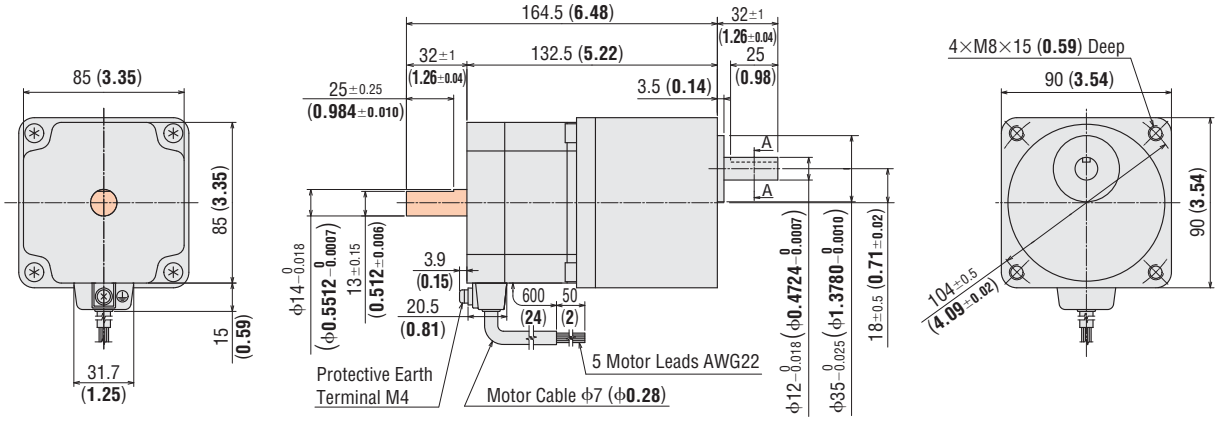
● Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.
Enter the gear ratio in the box (□) within the model name.



8 □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**		
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.



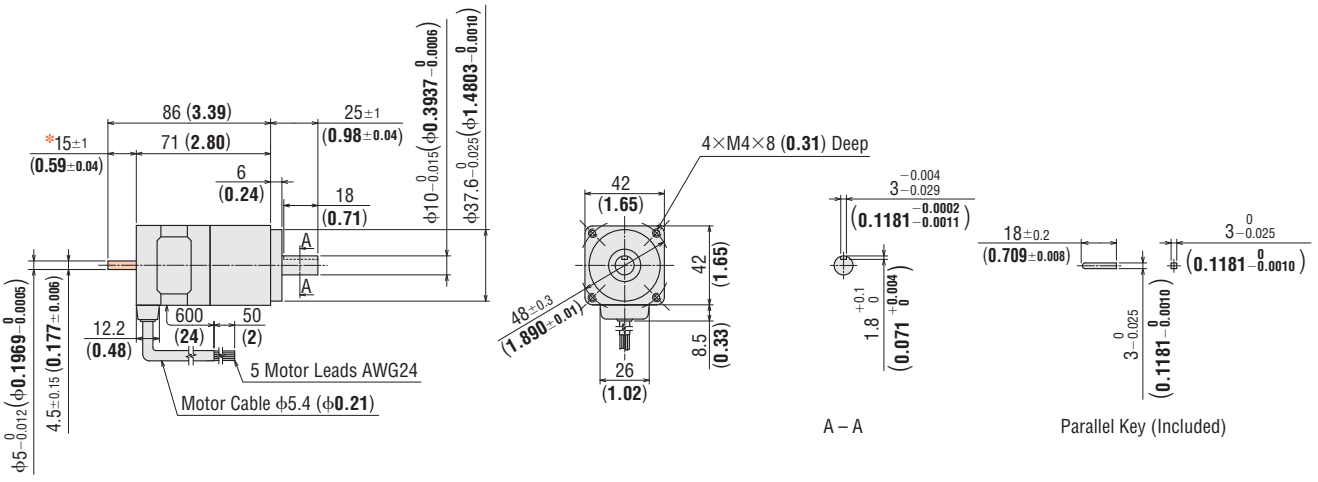
● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (□) areas.

◇**PN** Geared Type

9 □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 (□) within the model name.

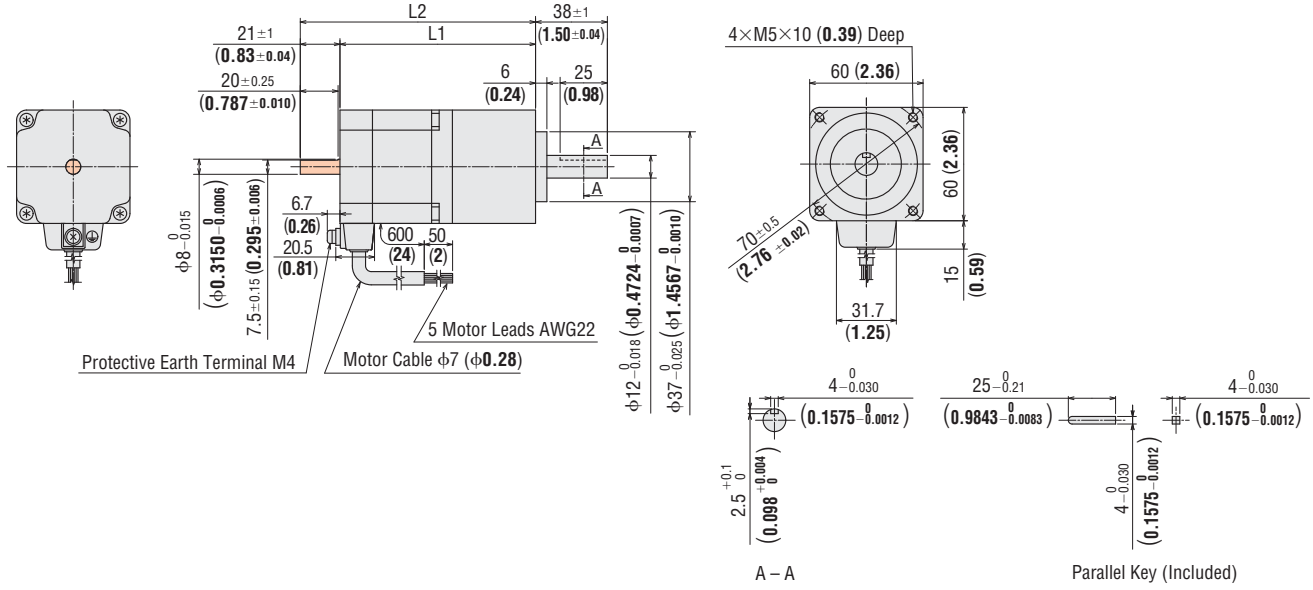


*The length of machining on the double shaft model is 15±0.25 (0.591±0.010).

10 □60 mm (□2.36 in.)

Model	Motor Model	Gear Ratio	L1	L2	Mass kg (lb.)	DXF
RK566A□E-N□	PK566AE-N□	**5**, **7.2**, **10**	103.5 (4.07)	–	1.5 (3.3)	B400
RK566B□E-N□	PK566BE-N□			124.5 (4.90)		
RK564A□E-N□	PK564AE-N□	**25**, **36**, **50**	108.5 (4.27)	–	1.5 (3.3)	B401
RK564B□E-N□	PK564BE-N□			129.5 (5.1)		

● 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.

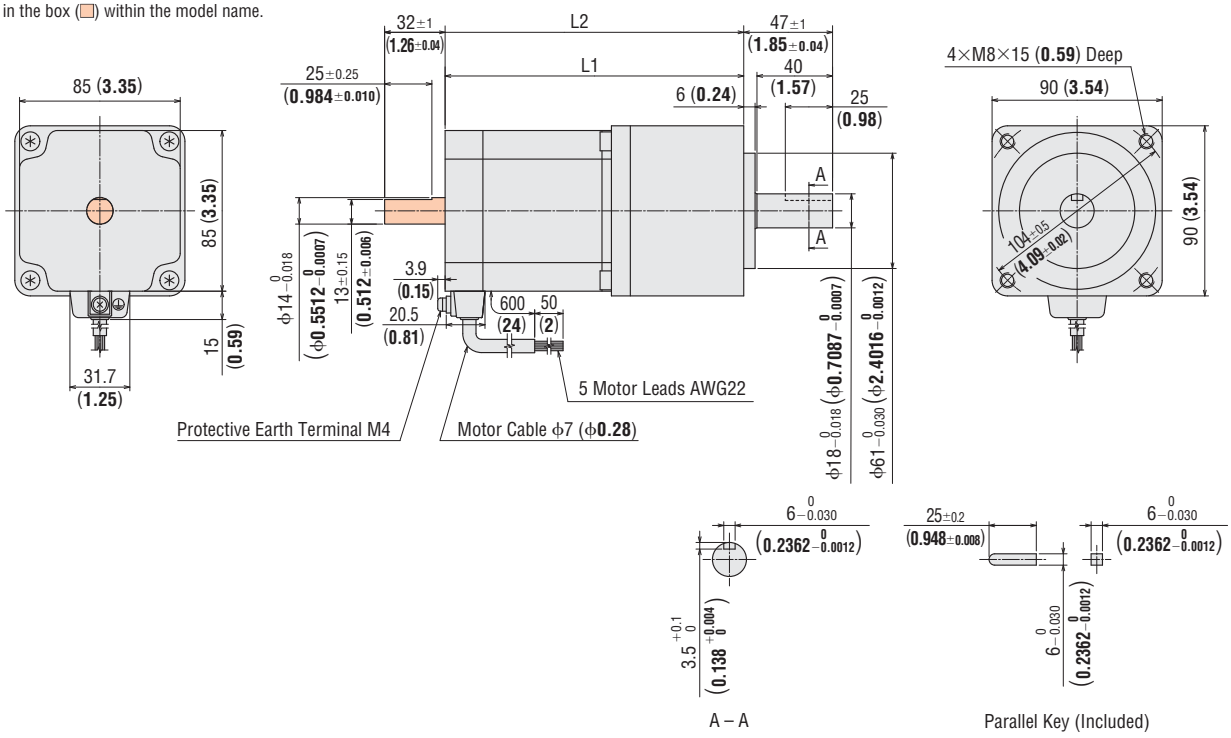


● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (▭) areas.

11 □90 mm (□3.54 in.)

Model	Motor Model	Gear Ratio	L1	L2	Mass kg (lb.)	DXF
RK599A□E-N□	PK599AE-N□	**5, 7.2, 10**	158 (6.22)	–	5 (11)	B402
RK599B□E-N□	PK599BE-N□			190 (7.48)		
RK596A□E-N□	PK596AE-N□	**25, 36, 50**	151 (5.94)	–	4.7 (10.3)	B403
RK596B□E-N□	PK596BE-N□			183 (7.20)		

● 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.

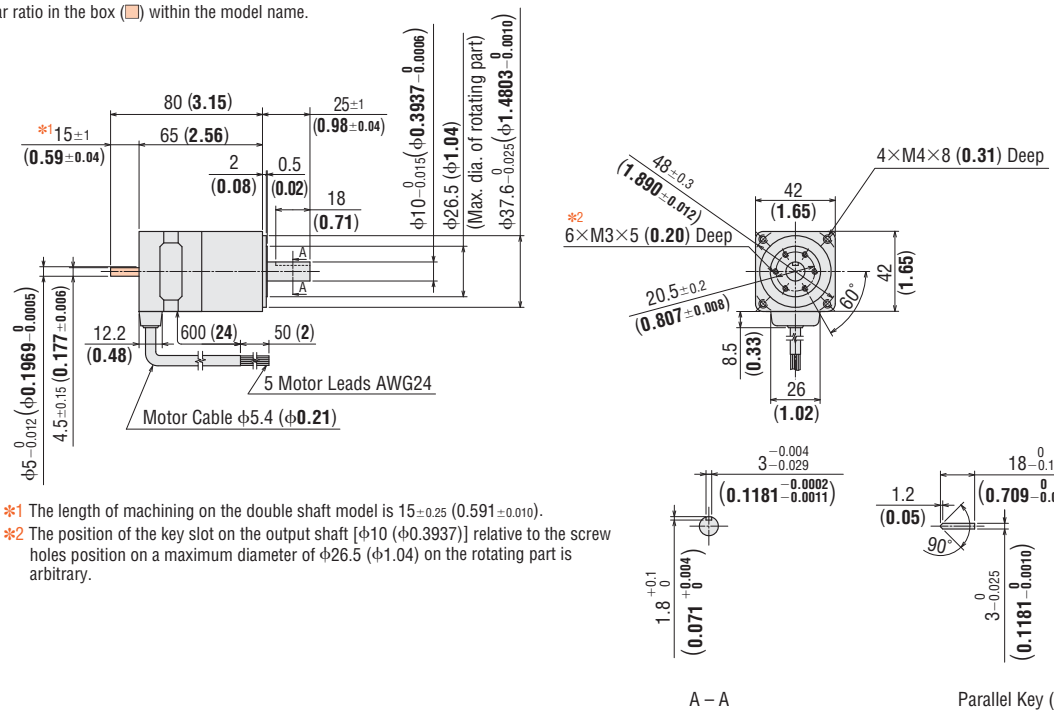


◇Harmonic Geared Type

12 □42 mm (□1.65 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK543AA-H□	PK543AW-H□S	**50, 100**	0.46 (1.01)	B313
RK543BA-H□	PK543BW-H□S			

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



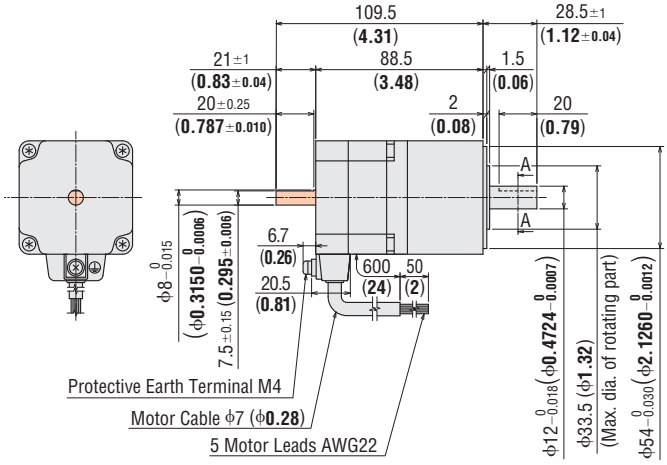
*1 The length of machining on the double shaft model is 15±0.25 (0.591±0.010).
*2 The position of the key slot on the output shaft [ϕ10 (ϕ0.3937)] relative to the screw holes position on a maximum diameter of ϕ26.5 (ϕ1.04) on the rotating part is arbitrary.

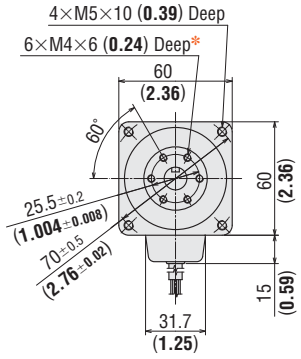
● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (▭) areas.

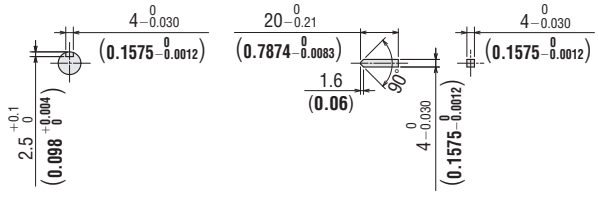
13 □60 mm (□2.36 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK564A□E-H□	PK564AE-H□S	**50, 100**	1.08 (2.4)	B404
RK564B□E-H□	PK564BE-H□S			

● 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.







A – A

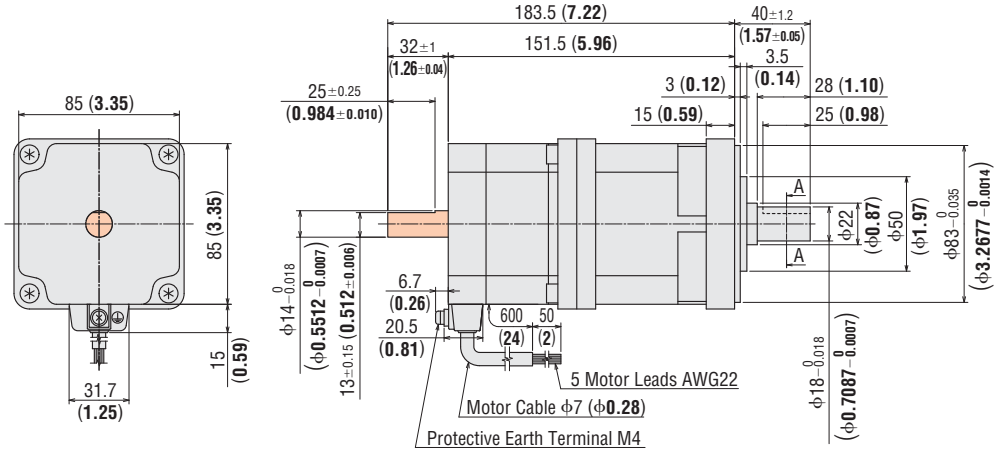
Parallel Key (Included)

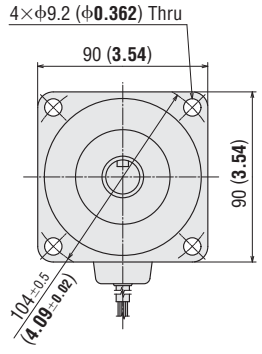
✻ The position of the key slot on the output shaft [ϕ12 (ϕ0.4724)] relative to the screw holes position on a maximum diameter of ϕ33.5 (ϕ1.32) on the rotating part is arbitrary.

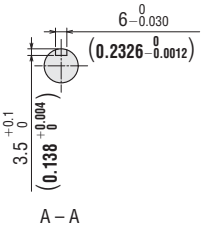
14 □90 mm (□3.54 in.)

Model	Motor Model	Gear Ratio	Mass kg (lb.)	DXF
RK596A□E-H□	PK596AE1-H□	**50, 100**	3.7 (8.1)	B405
RK596B□E-H□	PK596BE1-H□			

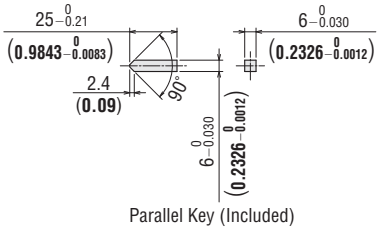
● Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.
Enter the gear ratio in the box (□) within the model name.







A – A



Parallel Key (Included)

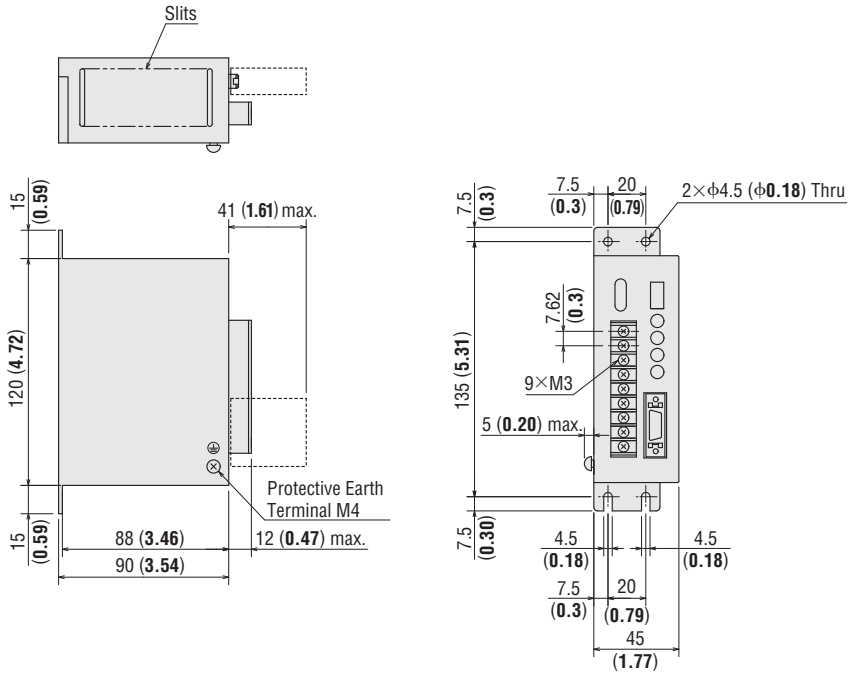
● These dimensions are for the double shaft models. For the single shaft models, ignore the orange (▭) areas.

●Driver

15 RKD507-A

Mass: 0.4 kg (0.88 lb.)

DXF B315

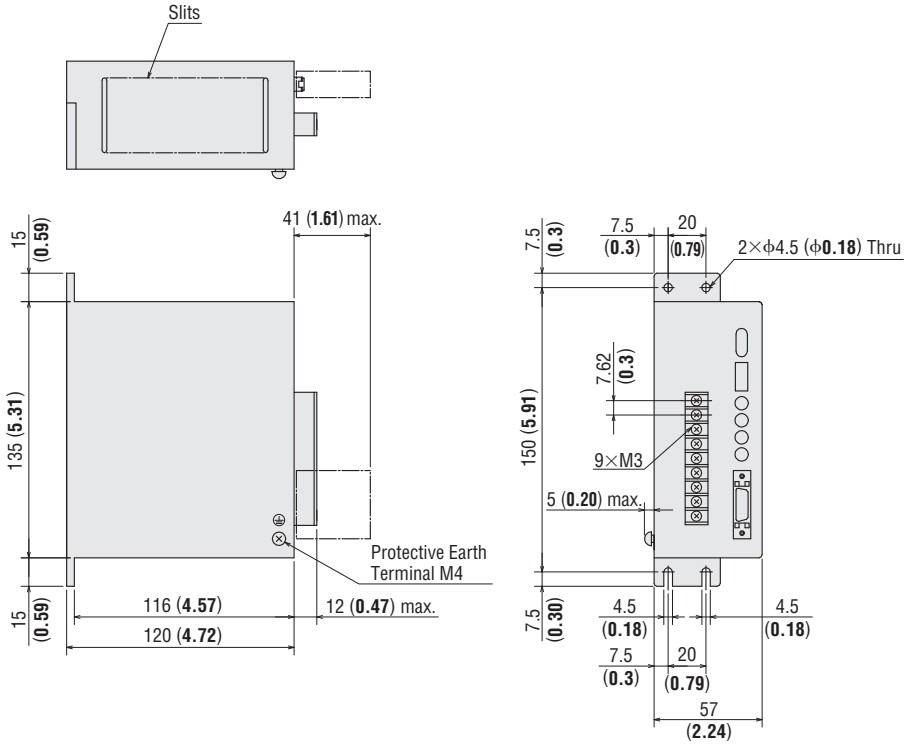


● Control I/O Connector (Included)
Cover Assembly: 54331-1201 (MOLEX)
Connector: 54306-2019 (MOLEX)

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

Mass: 0.85 kg (1.9 lb.)

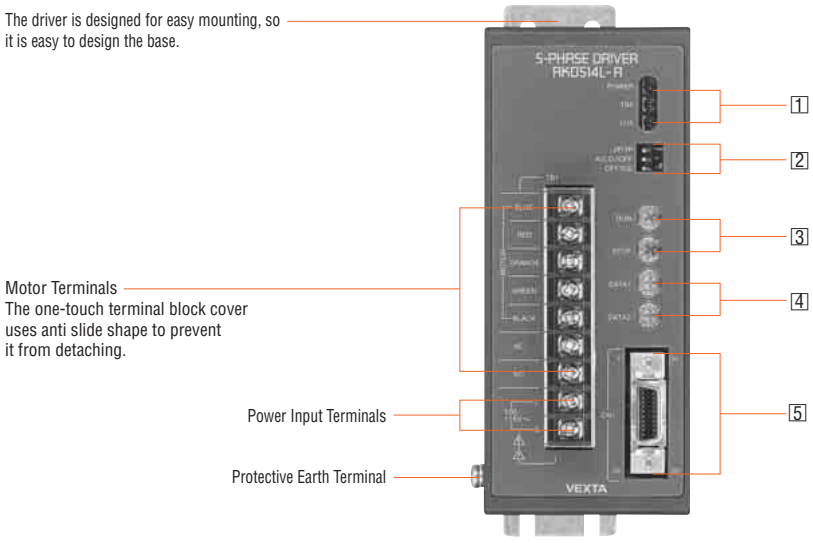
DXF B284



● Control I/O Connector (Included)
Cover Assembly: 54331-1201 (MOLEX)
Connector: 54306-2019 (MOLEX)

Connection and Operation

Names and Functions of Driver Parts



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

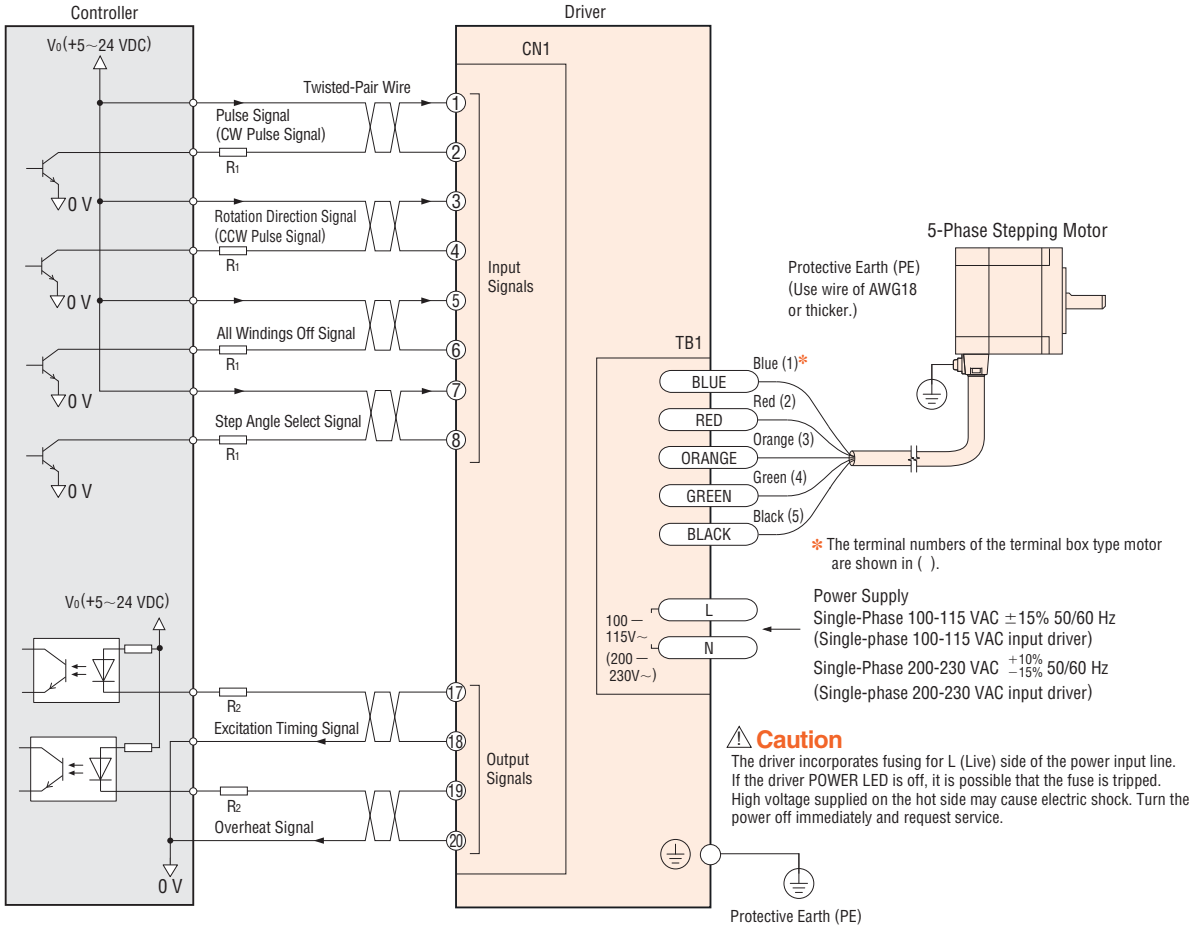
Selects and switches between the two step angle setting switches (DATA1 and DATA2).
Use the "Step Angle Select" signal to change the step angle.
Photocoupler OFF: Step angle (resolution) set by DATA1 is selected.
Photocoupler ON: Step angle (resolution) set by DATA2 is selected.

5 Input/Output Signals

Indication	Input/Output	Pin No.	Signal Name	Function
CN1	Input	1	Pulse signal (CW pulse signal)	Operation command pulse signal (The motor will rotate in the CW direction when in 2-pulse input mode.)
		2		
		3	Rotation direction signal (CCW pulse signal)	Rotation direction signal Photocoupler ON: CW, Photocoupler OFF: CCW (The motor will rotate in the CCW direction when in 2-pulse input mode.)
		4		
		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		

Description of input/output signals ➜ Page C-119

●Connection Diagram



⚠ Caution

The driver incorporates fusing for L (Live) side of the power input line.
If the driver POWER LED is off, it is possible that the fuse is tripped.
High voltage supplied on the hot side may cause electric shock. Turn the power off immediately and request service.

Protective Earth (PE)
(Use wire of AWG18 or thicker.)
●Protective earth terminal is located on the heat sink side.

◇Input Signal Connection

Signals can be connected directly when 5 VDC is supplied. If the signals are used at a voltage exceeding 5 VDC, be sure to provide an external resistor to prevent the current exceeding 20 mA from flowing. Internal components will be damaged if a voltage exceeding 5 VDC is supplied directly without using an external resistor.
Example: If the voltage is 24 VDC, connect a resistor (R_1) of 1.5 to 2.2 kΩ and 0.5 W or more.

◇Output Signal Connection

Use output signals at 24 VDC or less and 10 mA or less.
If these specifications are exceeded, the internal components may be damaged.
Check the specification of the connected equipment.
When the current is above 10 mA, connect an external resistor R_2.

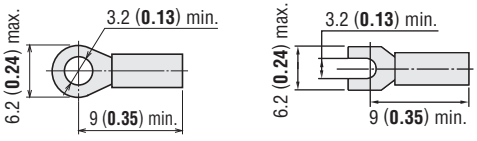
◇Power Supply

Use a power supply that can supply sufficient input current. When power supply capacity is insufficient, a decrease in motor output can cause the following malfunctions:
- Motor does not operate properly at high-speed.
- Slow motor startup and stopping

◇Notes on Wiring

- Use twisted-pair wires of AWG24 or thicker and keep wiring as short as possible [within 2 m (6.6 ft.)].
- Note that as the length of the pulse signal line increases, the maximum transmission frequency decreases. Technical reference ➜ Page F-54
- Use wires of AWG22 or thicker for motor line (when extended) and power supply lines, and use a wire of AWG18 or thicker for protective earth line.
- To ground the driver, lead the ground conductor form the protective earth terminal and connect the ground conductor to provide a common ground point.
- Provide a minimum distance of 10 cm (3.9 in.) between the signal lines and power lines (AC lines, motor lines and other large-current circuits).
  Do not run the signal lines in the same duct as power lines or bundle them with power lines.

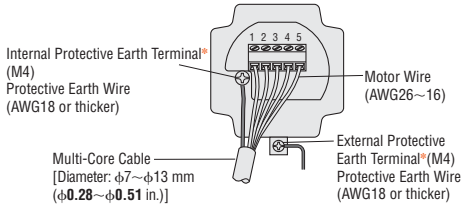
◇Recommended Crimp Terminals Unit = mm (in.)



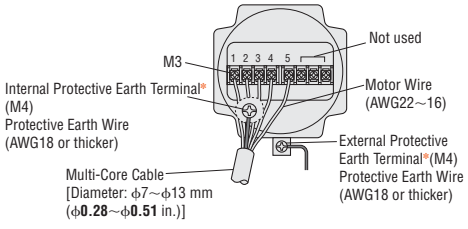
- Crimp terminals are not provided with the products. They must be purchased separately.

●Connection of Standard Type Terminal Box

RK564A□T, RK566A□T, RK569A□T



RK596A□T, RK599A□T, RK5913A□T



*Use either the internal or external protective earth terminal for grounding.
- Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.

Features C-90 / System Configuration C-94 / Product Line C-95

Description of Input/Output Signals

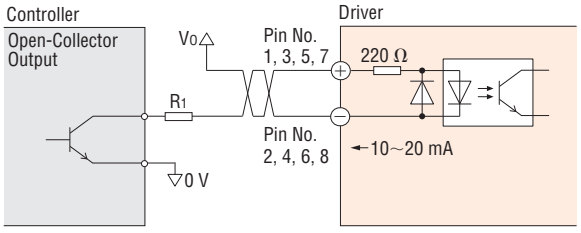
Indication of Input/Output Signal "ON""OFF"

Input (output) "ON" indicates that the current is sent into the photocoupler (transistor) inside the driver. Input (output) "OFF" indicates that the current is not sent into the photocoupler (transistor) inside the driver. The input/output remains "OFF" if nothing is connected.

Photocoupler OFF ON

Pulse (CW) and Rotation Direction (CCW) Input Signal
All Windings Off (A.W.OFF) Input Signal
Step Angle Select (C/S) Input Signal

◇Input Circuit and Sample Connection



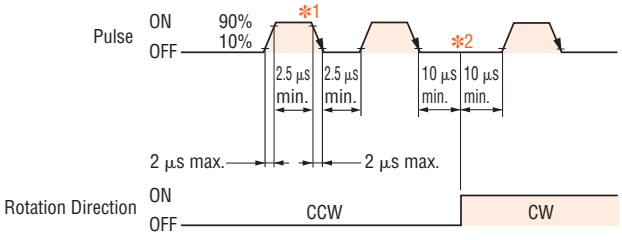
Note:

- Keep the voltage V_0 between 5 VDC and 24 VDC. When V_0 is equal to 5 VDC, the external resistor R_1 is not necessary. When V_0 is above 5 VDC, connect R_1 to keep the current between 10 mA and 20 mA.

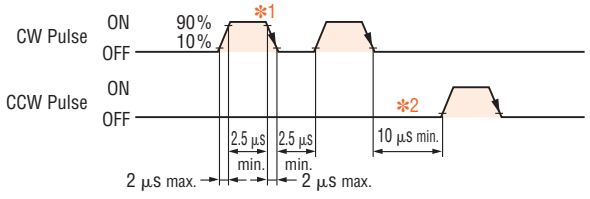
◇Pulse (CW) and Rotation Direction (CCW) Input Signal

Pulse Waveform Characteristics

• 1-Pulse Input Mode



• 2-Pulse Input Mode



Pulse duty: 50% and below

*1 The shaded area indicates when the photocoupler diode is ON. The motor moves when the photocoupler state changes from ON to OFF.

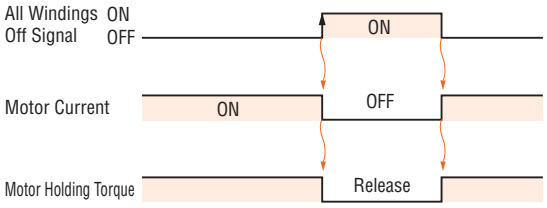
*2 The minimum interval time when changing rotation direction is 20 μs (10 μs minimum in 2-pulse input mode). This value varies greatly depending on the motor type and load inertia.

◇Pulse Signal Characteristics

- Keep the pulse signal at the "photocoupler OFF" state when no pulses are being input.
- In 1-pulse input mode, leave the pulse signal at rest ("photocoupler OFF") when changing rotation directions.
- In 2-pulse input mode, do not input a CW pulse and CCW pulse simultaneously.

◇All Windings Off (A.W.OFF) Input Signal

- Inputting this signal puts the motor in a non-excitation (free) state.
- This signal is used when moving the motor by external force or manual home position is desired. The photocoupler must be "OFF" when operating the motor.



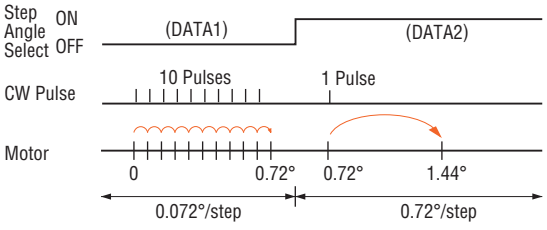
The shaded area indicates that the motor provides holding torque in proportion to standstill current set by STOP switch.

- Switching the "All Windings Off" (A.W. OFF) signal from "photocoupler ON" to "photocoupler OFF" does not alter the excitation sequence. When the motor shaft is manually adjusted with the "All Windings Off" signal input, the shaft will shift up to ±3.6° (Geared type: ±3.6°/gear ratio) from the position set after the "All Windings Off" signal is released.

◇Step Angle Select (C/S) Input Signal

- You may select two step angles (resolutions) from 16 available step angles (resolutions) with the step angle setting switches DATA1 and DATA2.
- When the signal is at "photocoupler OFF," a step angle set by DATA1 is selected; at "photocoupler ON," DATA2 is selected.

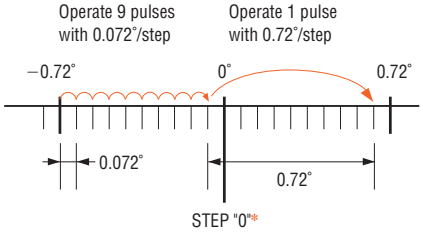
Example: Changing the step angle from 0.072° to 0.72°



- Be sure to change step angle select inputs only when the pulse signals are at rest. Switching while moving may cause a positional error of the motor.
- When the step angle is changed by the "Step Angle Select" signal, the "Excitation Timing" signal output may become impossible for some combinations of step angles. When the "Excitation Timing" signal is used, adjust the number of pulses so that the motor can operate with angles that are multiples of 7.2°.

Example:

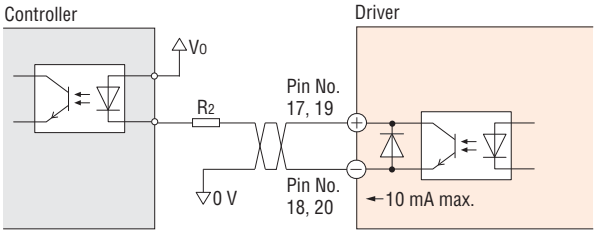
After moving 9 pulses with 0.072°/step setting, change the step angle to 0.72°/step and move 1 pulse. In this case, "Excitation Timing" signal will not be output because the step "0" position is skipped.



*"Excitation Timing" signal is only output at step "0" position.

Excitation Timing (TIM.) Output Signal
Overheat (O.H.) Output Signal

◇Output Circuit and Sample Connection



Note:

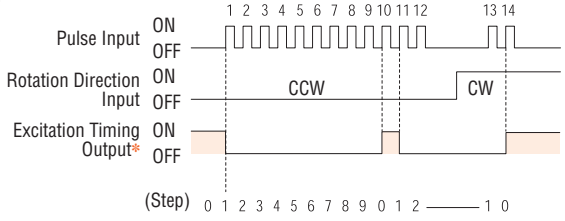
- Keep the voltage V_0 between 5 VDC and 24 VDC. Keep the current below 10 mA. If the current exceeds 10 mA, connect external resistor R_2.

◇Excitation Timing (TIM.) Output Signal

- The "Excitation Timing" signal is output to indicate when the motor excitation is in the initial stage (step "0" at power up).
- The "Excitation Timing" signal is output simultaneously with a pulse input each time the excitation sequence returns to step "0." The excitation sequence will complete one cycle for every 7.2° rotation of the motor output shaft.
  Microsteps/step 1: Signal is output once every 10 pulses.
  Microsteps/step 10: Signal is output once every 100 pulses.
  The TIM. LED on the front panel lights when the "Excitation Timing" signal is output.

Timing chart at 0.72°/step (Microsteps/step 1)

*When connected as shown in the sample connection, the signal will be "photocoupler ON" at step "0."

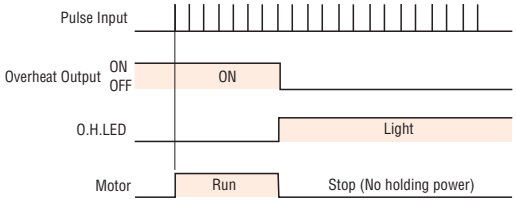


Note:

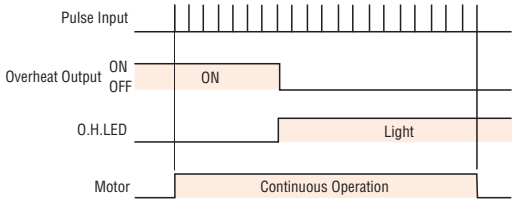
- When power is turned ON, the excitation sequence is reset to step "0" and the "Excitation Timing" signal is output.

◇Overheat (O.H.) Output Signal

- The "Overheat" signal is output to protect the driver from heat damage if the temperature of the driver heat sink rises above 80°C (176°F). The O.H. LED lights on the front panel when the "Overheat" signal is output.
- You can select whether to stop the motor or continue the operation when an "Overheat" signal is output.
- If the automatic current off function switch is set to "A.C.O." position, output current is cut off to stop the motor when the "Overheat" signal is output.

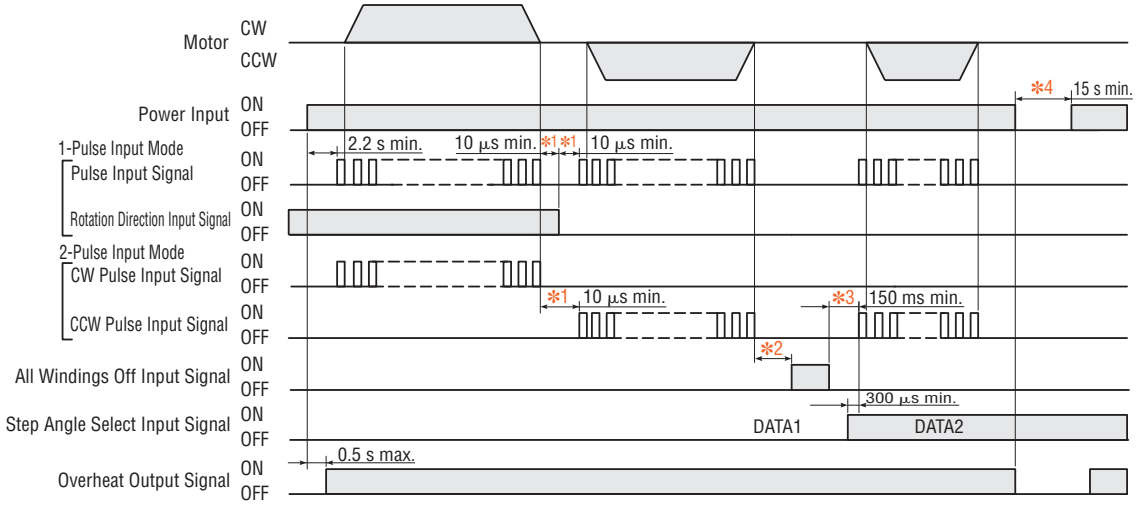


- If the automatic current off function switch is set to "OFF" position, the motor continues operation when the "Overheat" signal is output.



- To clear the "Overheat" signal, first resolve the cause and check for safety, then turn power on again.
- The overheat output uses positive logic (normally closed), all other outputs use negative logic (normally open).

●Timing Chart



*1 The minimum switching time to change direction (1-pulse input mode), and switching time to change CW, CCW pulse (2-pulse input mode) 10 µs is shown as a response time of circuit. The motor may need more time than that.
*2 Depends on load inertia, load torque and starting frequency.
*3 Never input a pulse signal immediately after switching the "All Windings Off" signal to the "photocoupler OFF" state. The motor may not start.
*4 Wait at least 15 seconds before turning on the power again.

List of Motor and Driver Combinations

Model names for motor and driver combinations are shown below.

Type	Model	Motor Model	Driver Model
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
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
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.