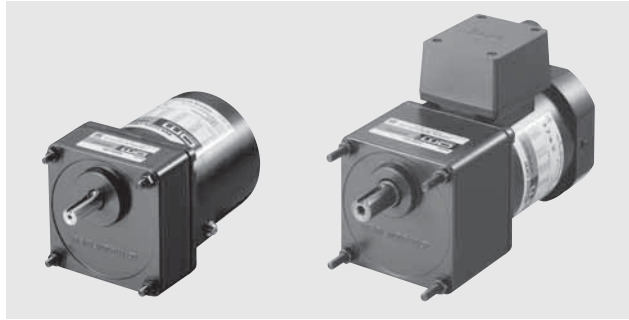


# Reversible Motors



## Features

### ● Optimal for Bi-Directional Operation

These are 30 minutes rated motors that can change directions instantaneously. They are designed for applications where reversal of direction is frequently required.

\*30 minutes rating: The motors may be operated continuously for 30 minutes, but depending on operating conditions (intermittent operation, etc), they can be operated for more than 30 minutes.

## Safety Standards and CE Marking

Standards	Certification Body	Standards File No.	CE Marking
UL 1004 UL 2111 CSA C22.2 No.100 CSA C22.2 No.77	UL	E64199 (1 W~6 W Type) E64197 (15 W~90 W Type)	Low Voltage Directives
EN 60950-1 EN 60034-1 EN 60034-5 IEC 60664-1		Conform to EN/IEC Standards	
GB 12350	CQC	2005010401150787 (Single-Phase 1 W Type) 2003010401091525 (Single-Phase 6 W Type) 2003010401091522 (Single-Phase 15 W~90 W Type)	

● When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

## System Configuration

**Mounting Brackets (Accessories)**  
(→ Page 121)

**Flexible Couplings (Accessories)**  
(→ Page 123)

**Motor**

**AC Power Supply**

**Capacitor (Included)**

**Capacitor Cap\* (Included)**  
Insulating cap for capacitor terminal section.

**Brake Pack SB50W (Sold separately)**  
Equipped with instantaneous stopping functions, thermal protector open detection functions.  
(→ Page 114)

**Right-Angle Gearheads (Sold separately)**  
(→ Page 108)

**Example of System Configuration (Body)**

Motor (Pinion Shaft) <b>4RK25GN-CW2E</b>	+	Long Life/Low Noise GN-S Gearhead <b>4GN25S</b>	Mounting Bracket <b>SOL4M5</b>	Flexible Coupling <b>MCL301012</b>
		⊙	○	○

⊙: Required under this system.  
○: Selectable according to necessity. Oriental Motor provides.  
\*Capacitor cap is included.

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

## Product Number Code

### Motor

# 5 R K 40 GN - CW 2 T E

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Motor Frame Size	<b>0:</b> 42 mm <b>2:</b> 60 mm <b>3:</b> 70 mm <b>4:</b> 80 mm <b>5:</b> 90 mm
② Motor Type	<b>R:</b> Reversible Motor
③ Series	<b>K:</b> K Series
④ Output Power (W)	(Example) <b>40:</b> 40 W
⑤ Motor Shaft Type	<b>GN:</b> GN Type Pinion Shaft <b>GE:</b> GE Type Pinion Shaft <b>A:</b> Round Shaft
⑥ Power Supply Voltage	<b>AW:</b> Single-Phase 100 VAC, 110/115 VAC <b>CW:</b> Single-Phase 200 VAC, 220/230 VAC
⑦	<b>2, 3:</b> RoHS-Compliant
⑧	<b>T:</b> Terminal Box Type
⑨ Included Capacitor	<b>J:</b> For Single-Phase 100 VAC, 200 VAC <b>U:</b> For Single-Phase 110/115 VAC <b>E:</b> For Single-Phase 220/230 VAC

● The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

(Example) Model: **5RK40GN-CW2E** → Motor nameplate and product approved under various safety standards: **5RK40GN-CW2**

### Gearhead

# 5 GN 50 S

① ② ③ ④

① Gearhead Frame Size	<b>0:</b> 42 mm <b>2:</b> 60 mm <b>3:</b> 70 mm <b>4:</b> 80 mm <b>5:</b> 90 mm	
② Type of Pinion	<b>GN:</b> GN Type Pinion <b>GE:</b> GE Type Pinion	
③ Gear Ratio	(Example) <b>50:</b> Gear Ratio of 1:50 <b>10X</b> denotes the decimal gearhead of gear ratio 1:10	
④	<b>GN</b> Type Pinion	<b>S:</b> Long Life/Low Noise <b>GN-S</b> Gearhead, RoHS-Compliant <b>K:</b> <b>GN-K</b> Gearhead <b>RH:</b> Right-Angle/Hollow Shaft Gearhead, RoHS-Compliant <b>RA:</b> Right-Angle/Solid Shaft Gearhead, RoHS-Compliant
	<b>GE</b> Type Pinion	<b>S:</b> Long Life <b>GE-S</b> Gearhead <b>RH:</b> Right-Angle/Hollow Shaft Gearhead, RoHS-Compliant <b>RA:</b> Right-Angle/Solid Shaft Gearhead, RoHS-Compliant

\* **GN-K** gearhead of frame size 42 mm complies to RoHS directive.

## General Specifications of Motors

### 1 W Type

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kV at 50 Hz or 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 75°C or less measured by the resistance change method after rated motor operation under normal ambient temperature and humidity, with connecting a gearhead or equivalent heat radiation plate*.
Insulation Class	UL/CSA standards: Class A (105°C), EN standards: Class E (120°C)
Overheat Protection	Impedance protected
Ambient Temperature	-10°C~+40°C (nonfreezing)
Ambient Humidity	85% or less (noncondensing)
Degree of Protection	IP20

### 6 W~90 W Type

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kV at 50 Hz or 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80°C or less measured by the resistance change method after rated motor operation under normal ambient temperature and humidity, with connecting a gearhead or equivalent heat radiation plate*. However, a heat radiation plate that is 200×200 mm with a thickness of 5 mm is necessary even when the gearhead is connected for the 90 W type (200 VAC, 220/230 VAC).
Insulation Class	Class B (130°C)
Overheat Protection	6 W type has impedance protection. All others have built-in thermal protector (automatic return type) Operating temperature; open: 130°C ± 5°C, close: 82°C ± 15°C
Ambient Temperature	Single-phase 100 VAC, Single-phase 200 VAC: -10°C~+50°C (nonfreezing) Other voltage: -10°C~+40°C (nonfreezing)
Ambient Humidity	85% or less (noncondensing)
Degree of Protection	Lead Wire Type: IP20 Terminal Box Type: 6 W Type IP65 (excluding the installation surface of the round shaft type) 25 W, 40 W, 60 W, 90 W Type IP40

\* Heat radiation plate (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
1 W Type	80×80	5
6 W Type	115×115	
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W Type 90 W Type (100 VAC, 110/115 VAC)	200×200	
90 W Type (200 VAC, 220/230 VAC)	200×200	10



(Gearhead sold separately)

Specifications – 30 Minutes Rating (RoHS)



Model Lead Wire Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
Pinion Shaft Type	Round Shaft Type								
ZP ORK1GN-AW2J	ORK1A-AW2J	1	Single-Phase 100	50	0.120	8	10	1000	1.8
				60	0.125		8	1200	
ZP ORK1GN-AW3U	ORK1A-AW3U	1	Single-Phase 110	60	0.090	8	8	1200	1.2
			Single-Phase 115		0.095				
ZP ORK1GN-CW2J	ORK1A-CW2J	1	Single-Phase 200	50	0.066	8	10	1000	0.45
				60	0.069		8	1200	

- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- The **J** and **U** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate.
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- ZP: Impedance protected

Product Line

● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	ORK1GN-AW2J	ORK1A-AW2J
	ORK1GN-AW3U	ORK1A-AW3U
	ORK1GN-CW2J	ORK1A-CW2J

● Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Parallel Shaft	OGN□K	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

Gearmotor – Torque Table

- Gearheads are sold separately. Decimal gearheads are not available.
- Enter the gear ratio in the box (□) within the model name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 33% less than the displayed value, depending on the size of the load.

◇ 50 Hz

Unit = N·m

Model Motor/Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
		Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150
ORK1GN-AW2J / ORK1GN-CW2J	OGN□K	0.024	0.029	0.041	0.049	0.061	0.073	0.091	0.11	0.13	0.17	0.2	0.24	0.33	0.4	0.44	0.53	0.59	0.71	0.89	1

◇ 60 Hz

Unit = N·m

Model Motor/Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
		Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150
ORK1GN-AW2J / ORK1GN-AW3U / ORK1GN-CW2J	OGN□K	0.019	0.023	0.032	0.039	0.049	0.058	0.073	0.088	0.11	0.13	0.16	0.19	0.26	0.32	0.35	0.42	0.47	0.57	0.71	0.85

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107

Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

→ Page 107

## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

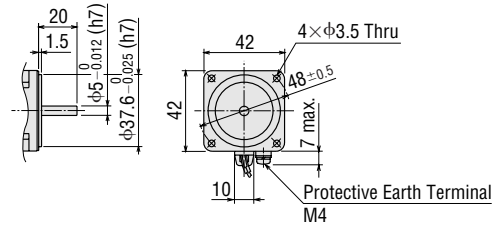
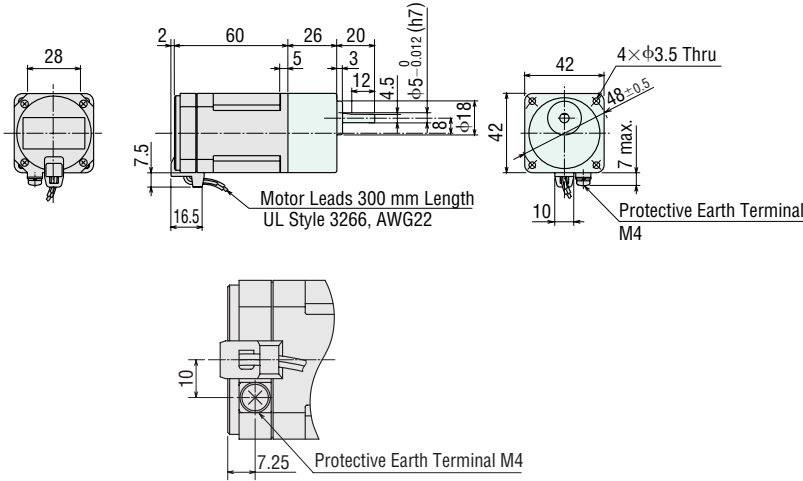
### Lead Wire Type

Mass: Motor 0.3 kg

Gearhead 0.2 kg

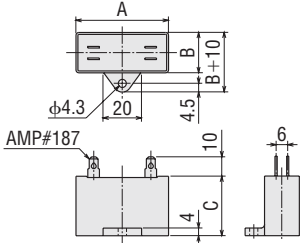
### Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.



Detail Drawing of Protective Earth Terminal

### Capacitor (Included with the motors)



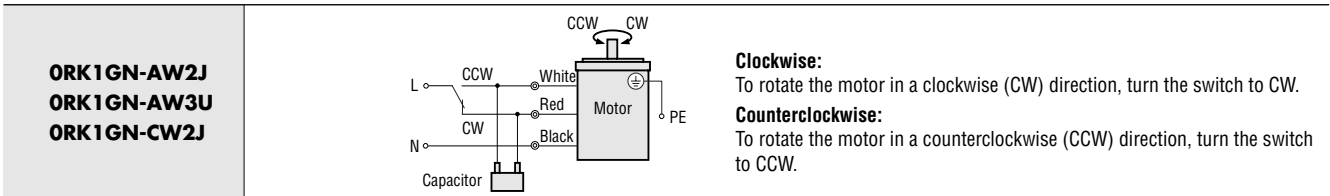
### Capacitor Dimensions (mm)

Model		Capacitor Model	A	B	C	Mass (g)	Capacitor Cap
Pinion Shaft Type	Round Shaft Type						
<b>ORK1GN-AW2J</b>	<b>ORK1A-AW2J</b>	CH18FAUL	31	14.5	23.5	18	Included
<b>ORK1GN-AW3U</b>	<b>ORK1A-AW3U</b>	CH12FAUL	31	14.5	23.5	18	
<b>ORK1GN-CW2J</b>	<b>ORK1A-CW2J</b>	CH045BFAUL	31	17	27	24	

## Connection Diagrams

● The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

● Connection diagrams are also valid for the equivalent round shaft type.

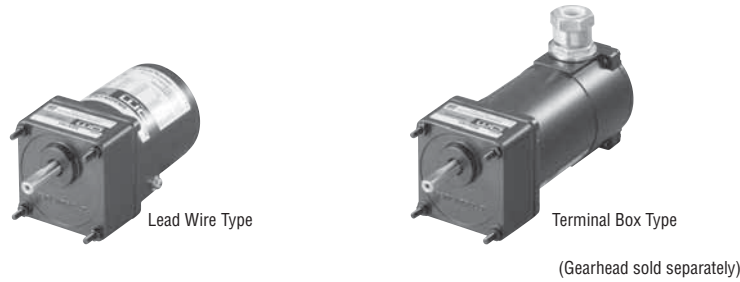


PE: Protective Earth

### Note:

Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123



Specifications – 30 Minutes Rating (RoHS)



Model		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type								
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
Ⓜ 2RK6GN-AW2J (2RK6A-AW2J)	2RK6GN-AW2TJ (2RK6A-AW2TJ)	6	Single-Phase 100	50	0.257	50	49	1150	4.5
				60	0.307	45	41	1400	
Ⓜ 2RK6GN-AW2U (2RK6A-AW2U)	2RK6GN-AW2TU (2RK6A-AW2TU)	6	Single-Phase 110	60	0.251	45	41	1450	3.5
Ⓜ 2RK6GN-CW2J (2RK6A-CW2J)	2RK6GN-CW2TJ (2RK6A-CW2TJ)	6	Single-Phase 200	50	0.120	50	49	1150	1.0
				60	0.138	45	41	1400	
Ⓜ 2RK6GN-CW2E (2RK6A-CW2E)	2RK6GN-CW2TE (2RK6A-CW2TE)	6	Single-Phase 220	50	0.113	45	49	1150	0.8
				60	0.117		41	1450	
			Single-Phase 230	50	0.117	50	49	1200	
				60	0.120	45	41	1450	

- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Ⓜ: Impedance protected

Product Line

● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	2RK6GN-AW2J	2RK6A-AW2J
	2RK6GN-AW2U	2RK6A-AW2U
	2RK6GN-CW2J	2RK6A-CW2J
	2RK6GN-CW2E	2RK6A-CW2E
Terminal Box	2RK6GN-AW2TJ	2RK6A-AW2TJ
	2RK6GN-AW2TU	2RK6A-AW2TU
	2RK6GN-CW2TJ	2RK6A-CW2TJ
	2RK6GN-CW2TE	2RK6A-CW2TE

● Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/Low Noise/ Parallel Shaft	2GN□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	2GN10XS	(Decimal gearhead)

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the code that represents the terminal box type "T" in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 3 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>2RK6GN-AW2</b> □J <b>2RK6GN-CW2</b> □J <b>2RK6GN-CW2</b> □E	<b>2GN</b> □S	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>2RK6GN-AW2</b> □J <b>2RK6GN-AW2</b> □U <b>2RK6GN-CW2</b> □J <b>2RK6GN-CW2</b> □E	<b>2GN</b> □S	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107  
Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

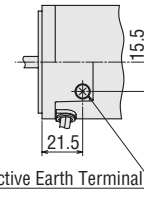
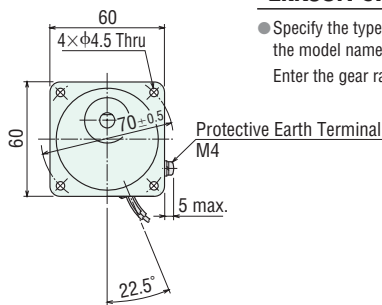
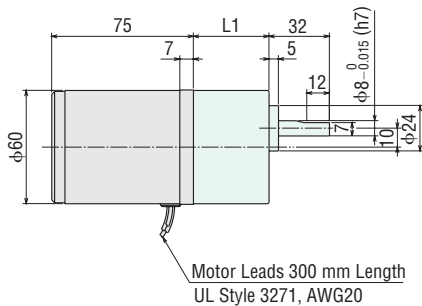
→ Page 107

## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type ①

Mass: Motor 0.7 kg  
Gearhead 0.4 kg



Detail Drawing of Protective Earth Terminal

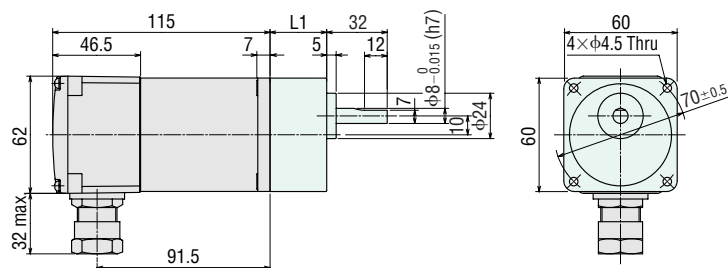
Motor Model	Gearhead Model	Gear Ratio	L1
<b>2RK6GN-AW2</b> □	<b>2GN</b> □S	<b>3~18</b>	30
<b>2RK6GN-CW2</b> □		<b>25~180</b>	40

- Specify the type of the capacitor to be included by entering J, U or E in the box (□) within the model name.  
Enter the gear ratio in the box (□) within the model name.

## ◇ Terminal Box Type ②

Mass: Motor 0.9 kg

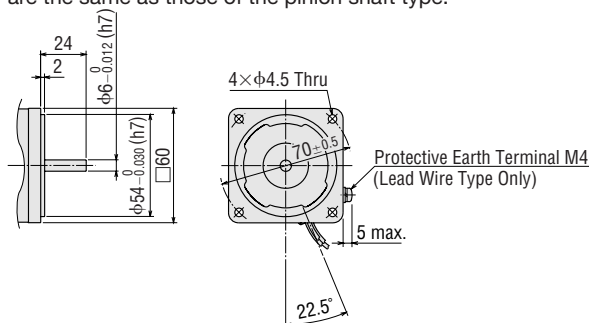
Gearhead 0.4 kg



- Use cable with a diameter of  $\phi 8 \sim \phi 12$  mm.

## ◇ Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.

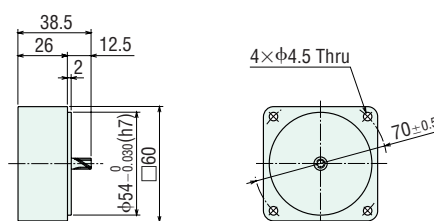


## ◇ Decimal Gearhead

Can be connected to **GN** pinion shaft type.

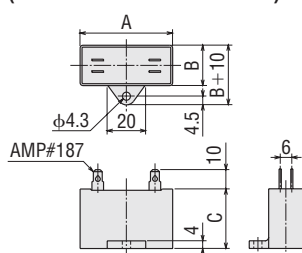
**2GN10XS**

Mass: 0.2 kg



## ◇ Capacitor

(Included with the motors)



## ◇ Capacitor Dimensions (mm)

Model		Capacitor Model	A	B	C	Mass (g)	Capacitor Cap
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
<b>2RK6GN-AW2J</b> ( <b>2RK6A-AW2J</b> )	<b>2RK6GN-AW2TJ</b> ( <b>2RK6A-AW2TJ</b> )	CH45FAUL2	37	18	27	30	Included
<b>2RK6GN-AW2U</b> ( <b>2RK6A-AW2U</b> )	<b>2RK6GN-AW2TU</b> ( <b>2RK6A-AW2TU</b> )	CH35FAUL2	31	17	27	25	
<b>2RK6GN-CW2J</b> ( <b>2RK6A-CW2J</b> )	<b>2RK6GN-CW2TJ</b> ( <b>2RK6A-CW2TJ</b> )	CH10BFAUL	37	18	27	30	
<b>2RK6GN-CW2E</b> ( <b>2RK6A-CW2E</b> )	<b>2RK6GN-CW2TE</b> ( <b>2RK6A-CW2TE</b> )	CH08BFAUL	31	17	27	20	

## ■ Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

Lead Wire Type	Terminal Box Type
<b>2RK6GN-AW2</b> □ <b>2RK6GN-CW2</b> □	<b>2RK6GN-AW2T</b> □ <b>2RK6GN-CW2T</b> □
<p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>	<p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>

PE: Protective Earth

**Note:**

Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123



## Reversible Motors

15 W

Frame Size: □70 mm



(Gearhead sold separately)

## Specifications – 30 Minutes Rating (RoHS)



Model Lead Wire Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
Pinion Shaft Type	Round Shaft Type								
TP	3RK15GN-AW2J	15	Single-Phase 100	50	0.41	100	125	1200	7.5
				60	0.50		105	1450	
TP	3RK15GN-AW2U	15	Single-Phase 110	60	0.41	100	105	1450	6.0
			Single-Phase 115		0.41				
TP	3RK15GN-CW2J	15	Single-Phase 200	50	0.21	100	125	1200	1.8
				60	0.24		105	1450	
TP	3RK15GN-CW2E	15	Single-Phase 220	50	0.20	100	125	1200	1.5
				60	0.21		105	1450	
				50	0.20		125	1200	
				60	0.21		105	1450	

● Values shown for rated torque and starting torque are measured for operation without the friction brake installed.

● The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate.

When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

TP: Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops.

When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

## Product Line

## ● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	3RK15GN-AW2J	3RK15A-AW2J
	3RK15GN-AW2U	3RK15A-AW2U
	3RK15GN-CW2J	3RK15A-CW2J
	3RK15GN-CW2E	3RK15A-CW2E

## ● Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/Low Noise/ Parallel Shaft	3GN□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	3GN10XS (Decimal gearhead)	

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model name.
- A colored background  indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 5 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>3RK15GN-AW2J</b> <b>3RK15GN-CW2J</b> <b>3RK15GN-CW2E</b>	<b>3GN□S</b>	0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>3RK15GN-AW2J</b> <b>3RK15GN-AW2U</b> <b>3RK15GN-CW2J</b> <b>3RK15GN-CW2E</b>	<b>3GN□S</b>	0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107

Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

→ Page 107

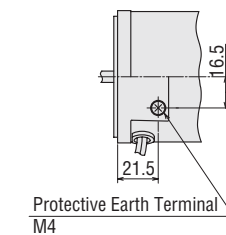
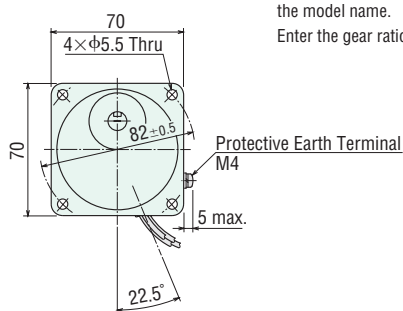
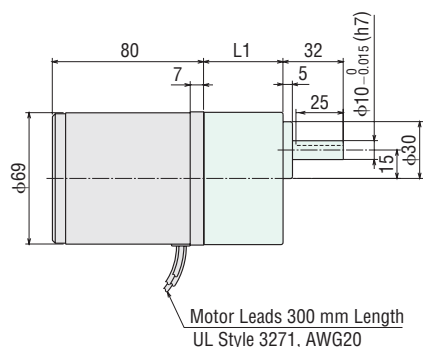
## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type

Mass: Motor 1.1 kg

Gearhead 0.55 kg



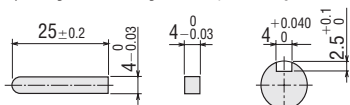
Detail Drawing of Protective Earth Terminal

Motor Model	Gearhead Model	Gear Ratio	L1
<b>3RK15GN-AW2</b> <span style="background-color: #e0f2f1;"></span>	<b>3GN□S</b>	<b>3~18</b>	32
<b>3RK15GN-CW2</b> <span style="background-color: #e0f2f1;"></span>		<b>25~180</b>	42

- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

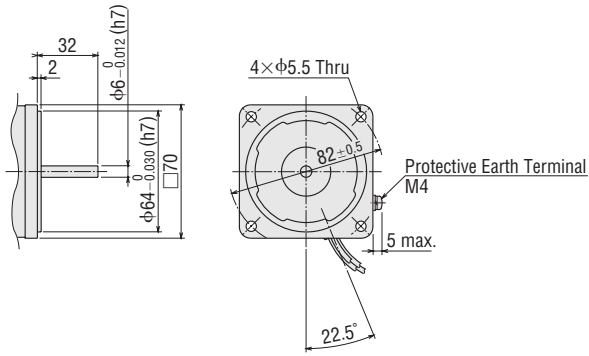
Enter the gear ratio in the box (□) within the model name.

### ◇ Key and Key Slot (The key is included with the gearhead)



◇ Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.

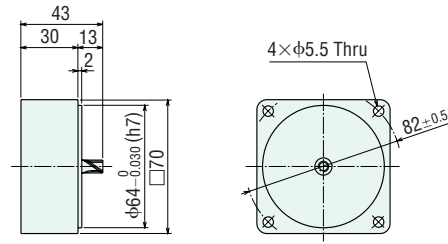


◇ Decimal Gearhead

Can be connected to **GN** pinion shaft type.

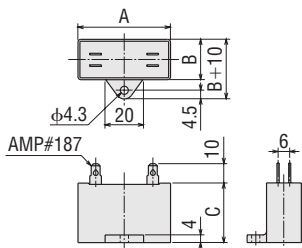
**3GN10XS**

Mass: 0.3 kg



◇ Capacitor

(Included with the motors)

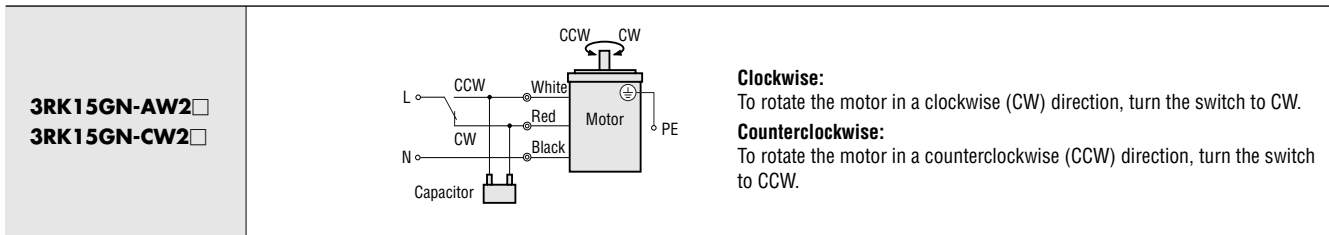


◇ Capacitor Dimensions (mm)

Model		Capacitor Model	A	B	C	Mass (g)	Capacitor Cap
Pinion Shaft Type	Round Shaft Type						
<b>3RK15GN-AW2J</b>	<b>3RK15A-AW2J</b>	CH75CFAUL2	48	21	31	45	Included
<b>3RK15GN-AW2U</b>	<b>3RK15A-AW2U</b>	CH60CFAUL2	38	21	31	40	
<b>3RK15GN-CW2J</b>	<b>3RK15A-CW2J</b>	CH18BFAUL	38	21	31	35	
<b>3RK15GN-CW2E</b>	<b>3RK15A-CW2E</b>	CH15BFAUL	38	21	31	35	

■ Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

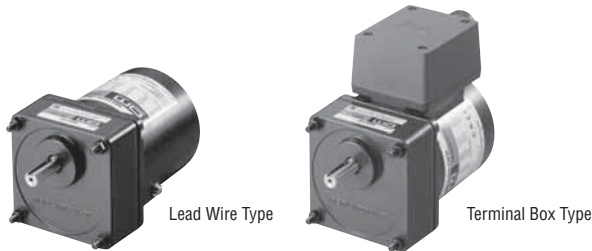


PE: Protective Earth

**Note:**

Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123

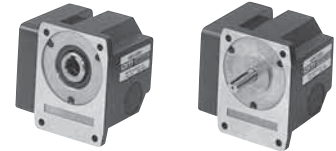


Lead Wire Type

Terminal Box Type

(Gearhead sold separately)

Right-angle gearheads (hollow shaft or solid shaft) can be combined.  
Right-Angle Gearheads → Page 108



Specifications – 30 Minutes Rating (RoHS)



Model		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type								
Lead Wire Type	Terminal Box Type	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
Dimension ①	Dimension ②								
TP 4RK25GN-AW2J (4RK25A-AW2J)	4RK25GN-AW2TJ (4RK25A-AW2TJ)	25	Single-Phase 100	50	0.59	160	205	1200	10
				60	0.69	140	170	1450	
TP 4RK25GN-AW2U (4RK25A-AW2U)	4RK25GN-AW2TU (4RK25A-AW2TU)	25	Single-Phase 110	60	0.56	140	170	1450	8.0
			Single-Phase 115						
TP 4RK25GN-CW2J (4RK25A-CW2J)	4RK25GN-CW2TJ (4RK25A-CW2TJ)	25	Single-Phase 200	50	0.32	160	205	1200	3.0
				60	0.40	140	170	1450	
TP 4RK25GN-CW2E (4RK25A-CW2E)	4RK25GN-CW2TE (4RK25A-CW2TE)	25	Single-Phase 220	50	0.29	140	205	1200	2.5
				60	0.35		170	1450	
			Single-Phase 230	50	0.30	160	205	1200	
				60	0.35	140	170	1450	

- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- TP: Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops.  
When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

Product Line

Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	4RK25GN-AW2J	4RK25A-AW2J
	4RK25GN-AW2U	4RK25A-AW2U
	4RK25GN-CW2J	4RK25A-CW2J
	4RK25GN-CW2E	4RK25A-CW2E
Terminal Box	4RK25GN-AW2TJ	4RK25A-AW2TJ
	4RK25GN-AW2TU	4RK25A-AW2TU
	4RK25GN-CW2TJ	4RK25A-CW2TJ
	4RK25GN-CW2TE	4RK25A-CW2TE

Gearhead/Right-Angle Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/Low Noise/ Parallel Shaft	4GN□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	4GN10XS (Decimal gearhead)	
Right-Angle/ Hollow Shaft	4GN□RH	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
Right-Angle/ Solid Shaft	4GN□RA	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the code that represents the terminal box type "T" in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 8 N·m. When a gearhead of 1/25~1/36 is connected, the value for permissible torque is 6 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4RK25GN-AW2</b> □J <b>4RK25GN-CW2</b> □J <b>4RK25GN-CW2</b> □E	<b>4GN</b> □S	0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4RK25GN-AW2</b> □J <b>4RK25GN-AW2</b> □U <b>4RK25GN-CW2</b> □J <b>4RK25GN-CW2</b> □E	<b>4GN</b> □S	0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107  
Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

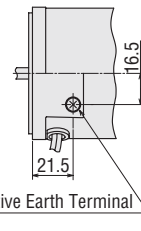
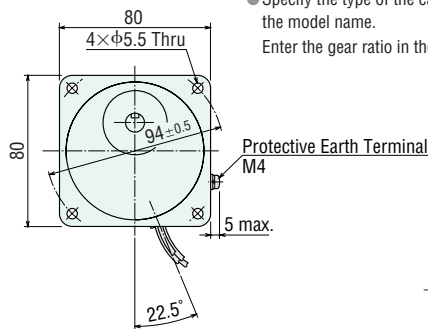
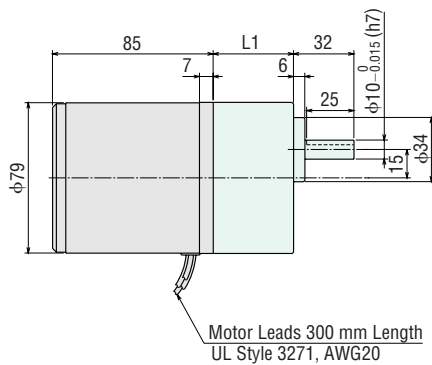
→ Page 107

## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type ①

Mass: Motor 1.5 kg  
Gearhead 0.65 kg



Detail Drawing of Protective Earth Terminal

Motor Model	Gearhead Model	Gear Ratio	L1
<b>4RK25GN-AW2</b> □J <b>4RK25GN-CW2</b> □J	<b>4GN</b> □S	<b>3~18</b>	32
		<b>25~180</b>	42.5

- Specify the type of the capacitor to be included by entering J, U or E in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.

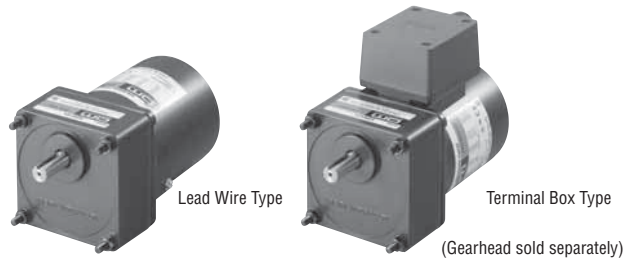


RoHS

## Reversible Motors

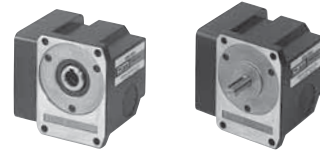
40 W

Frame Size: □90 mm



Right-angle gearheads (hollow shaft or solid shaft) can be combined.

Right-Angle Gearheads → Page 108



## Specifications – 30 Minutes Rating (RoHS)



Model Upper Model Name: Pinion Shaft Type Lower Model Name ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP 5RK40GN-AW2J (5RK40A-AW2J)	5RK40GN-AW2TJ (5RK40A-AW2TJ)	40	Single-Phase 100	50	0.91	300	315	1250	16
				60	1.09	260	270	1450	
TP 5RK40GN-AW2U (5RK40A-AW2U)	5RK40GN-AW2TU (5RK40A-AW2TU)	40	Single-Phase 110	60	0.88	260	270	1450	12
			Single-Phase 115		0.87				
TP 5RK40GN-CW2J (5RK40A-CW2J)	5RK40GN-CW2TJ (5RK40A-CW2TJ)	40	Single-Phase 200	50	0.46	270	315	1250	4.0
				60	0.55	260	260	1500	
TP 5RK40GN-CW2E (5RK40A-CW2E)	5RK40GN-CW2TE (5RK40A-CW2TE)	40	Single-Phase 220	50	0.43	270	315	1250	3.5
				60	0.48	260	260	1500	
				50	0.43	270	315	1250	
				60	0.48	260	260	1500	

● Values shown for rated torque and starting torque are measured for operation without the friction brake installed.

● The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

TP: Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops.

When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

## Product Line

## ● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5RK40GN-AW2J	5RK40A-AW2J
	5RK40GN-AW2U	5RK40A-AW2U
	5RK40GN-CW2J	5RK40A-CW2J
	5RK40GN-CW2E	5RK40A-CW2E
Terminal Box	5RK40GN-AW2TJ	5RK40A-AW2TJ
	5RK40GN-AW2TU	5RK40A-AW2TU
	5RK40GN-CW2TJ	5RK40A-CW2TJ
	5RK40GN-CW2TE	5RK40A-CW2TE

## ● Gearhead/Right-Angle Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/Low Noise/ Parallel Shaft	5GN□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	5GN10XS (Decimal gearhead)	
Right-Angle/ Hollow Shaft	5GN□RH	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
Right-Angle/ Solid Shaft	5GN□RA	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the code that represents the terminal box type "T" in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- A colored background  indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 10 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK40GN-AW2</b> □J <b>5RK40GN-CW2</b> □J <b>5RK40GN-CW2</b> □E	<b>5GN</b> □S	0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK40GN-AW2</b> □J <b>5RK40GN-AW2</b> □U	<b>5GN</b> □S	0.66	0.79	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.9	5.9	7.1	8.9	10	10	10	10	10	10	10
<b>5RK40GN-CW2</b> □J <b>5RK40GN-CW2</b> □E	<b>5GN</b> □S	0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107

Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

→ Page 107

## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type ①

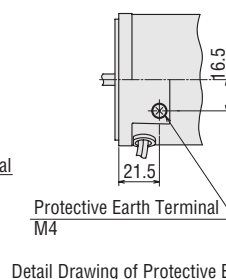
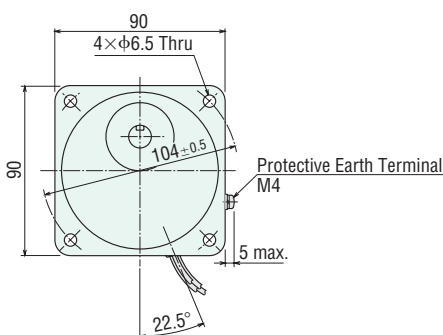
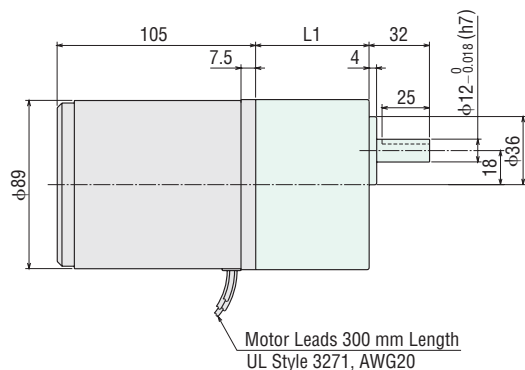
Mass: Motor 2.5 kg

Gearhead 1.5 kg

Motor Model	Gearhead Model	Gear Ratio	L1
<b>5RK40GN-AW2</b> □J <b>5RK40GN-CW2</b> □J	<b>5GN</b> □S	<b>3~18</b>	42
		<b>25~180</b>	60

- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

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



Detail Drawing of Protective Earth Terminal

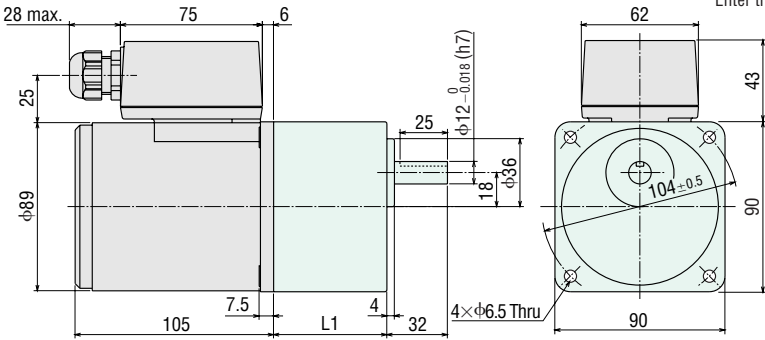


◇ Terminal Box Type ②

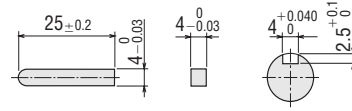
Mass: Motor 2.6 kg  
Gearhead 1.5 kg

Motor Model	Gearhead Model	Gear Ratio	L1
5RK40GN-AW2T	5GN□S	3~18	42
5RK40GN-CW2T		25~180	60

Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.  
Enter the gear ratio in the box (□) within the model name.



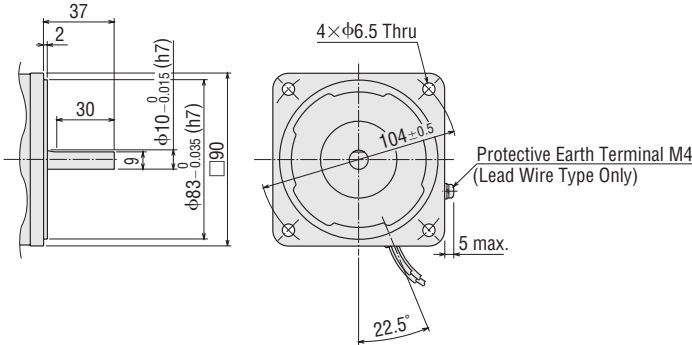
◇ Key and Key Slot  
(The key is included with the gearhead)



● Use cable with a diameter of φ6 ~ φ12 mm.

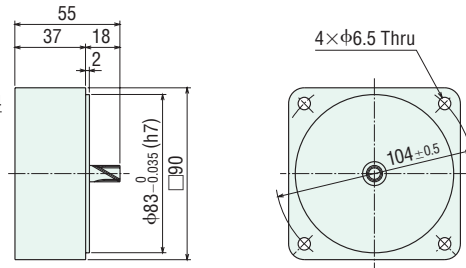
◇ Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.

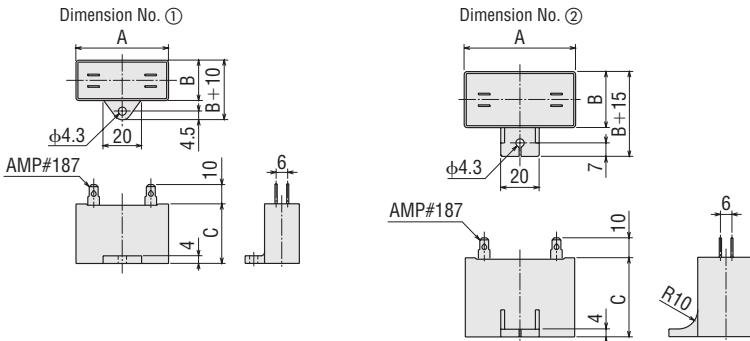


◇ Decimal Gearhead

Can be connected to **GN** pinion shaft type.  
**5GN10XS**  
Mass: 0.6 kg



◇ Capacitor (Included with the motors)

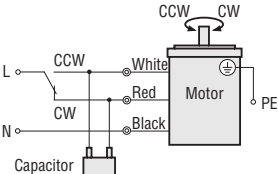
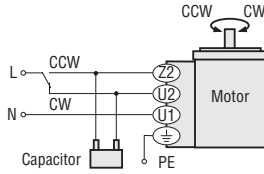


◇ Capacitor Dimensions (mm)

Model		Capacitor Model	A	B	C	Mass (g)	Dimension No.	Capacitor Cap
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type							
Lead Wire Type	Terminal Box Type							
5RK40GN-AW2J (5RK40A-AW2J)	5RK40GN-AW2TJ (5RK40A-AW2TJ)	CH160CFAUL2	58	23.5	37	75	②	Included
5RK40GN-AW2U (5RK40A-AW2U)	5RK40GN-AW2TU (5RK40A-AW2TU)	CH120CFAUL2	58	22	35	60	①	
5RK40GN-CW2J (5RK40A-CW2J)	5RK40GN-CW2TJ (5RK40A-CW2TJ)	CH40BFAUL	58	23.5	37	70	②	
5RK40GN-CW2E (5RK40A-CW2E)	5RK40GN-CW2TE (5RK40A-CW2TE)	CH35BFAUL	58	22	35	55	①	

## Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

Lead Wire Type	Terminal Box Type
<b>5RK40GN-AW2</b> □ <b>5RK40GN-CW2</b> □	<b>5RK40GN-AW2T</b> □ <b>5RK40GN-CW2T</b> □
 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>	 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>

PE: Protective Earth

**Note:**

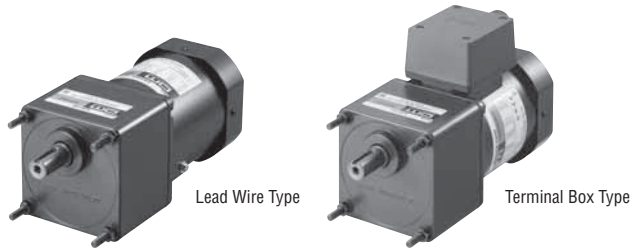
Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123

## Reversible Motors

60 W

Frame Size: □90 mm



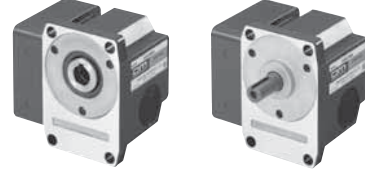
Lead Wire Type

Terminal Box Type

(Gearhead sold separately)

Right-angle gearheads (hollow shaft or solid shaft) can be combined.

Right-Angle Gearheads → Page 108



## Specifications – 30 Minutes Rating (RoHS)



Model Upper Model Name: Pinion Shaft Type Lower Model Name ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP 5RK60GE-AW2J (5RK60A-AW2J)	5RK60GE-AW2TJ (5RK60A-AW2TJ)	60	Single-Phase 100	50	1.35	470	490	1200	25
				60	1.52	380	405	1450	
TP 5RK60GE-AW2U (5RK60A-AW2U)	5RK60GE-AW2TU (5RK60A-AW2TU)	60	Single-Phase 110	60	1.27	380	405	1450	20
			Single-Phase 115						
TP 5RK60GE-CW2J (5RK60A-CW2J)	5RK60GE-CW2TJ (5RK60A-CW2TJ)	60	Single-Phase 200	50	0.66	450	490	1200	6.0
				60	0.79	380	405	1450	
TP 5RK60GE-CW2E (5RK60A-CW2E)	5RK60GE-CW2TE (5RK60A-CW2TE)	60	Single-Phase 220	50	0.61	420	490	1200	5.0
				60	0.67	380	405	1450	
				50	0.63	470	490	1200	
				60	0.66	380	405	1450	

● Values shown for rated torque and starting torque are measured for operation without the friction brake installed.

● The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

TP: Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops.

When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

## Product Line

## ● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5RK60GE-AW2J	5RK60A-AW2J
	5RK60GE-AW2U	5RK60A-AW2U
	5RK60GE-CW2J	5RK60A-CW2J
	5RK60GE-CW2E	5RK60A-CW2E
Terminal Box	5RK60GE-AW2TJ	5RK60A-AW2TJ
	5RK60GE-AW2TU	5RK60A-AW2TU
	5RK60GE-CW2TJ	5RK60A-CW2TJ
	5RK60GE-CW2TE	5RK60A-CW2TE

## ● Gearhead/Right-Angle Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/ Parallel Shaft	5GE□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	5GE10XS (Decimal gearhead)	
Right-Angle/ Hollow Shaft	5GE□RH	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
Right-Angle/ Solid Shaft	5GE□RA	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the code that represents the terminal box type "T" in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK60GE-AW2</b> □J <b>5RK60GE-CW2</b> □J <b>5RK60GE-CW2</b> □E	<b>5GE</b> □S	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	11.6	16.2	19.4	20	20	20	20	20	20

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK60GE-AW2</b> □J <b>5RK60GE-AW2</b> □U <b>5RK60GE-CW2</b> □J <b>5RK60GE-CW2</b> □E	<b>5GE</b> □S	0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13.4	16.0	17.9	20	20	20	20	20

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107

Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

→ Page 107

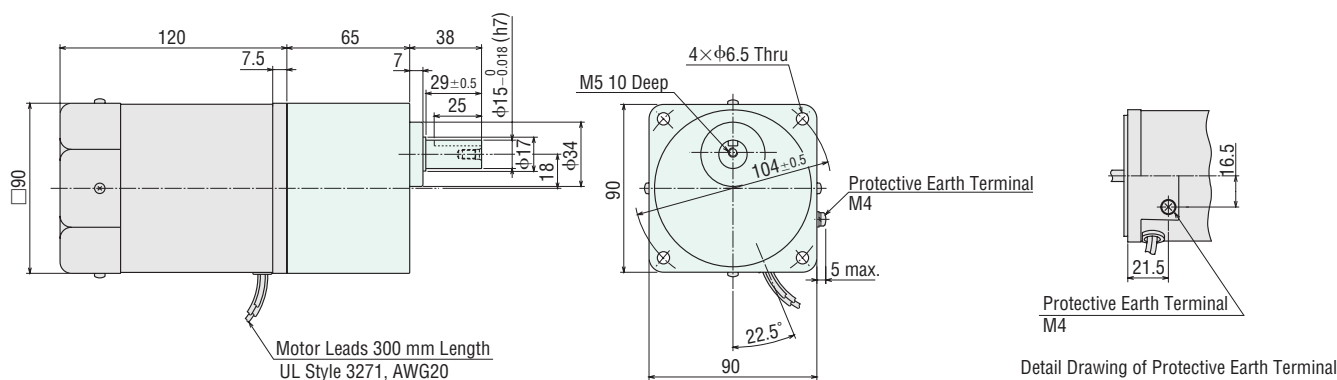
## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type ①

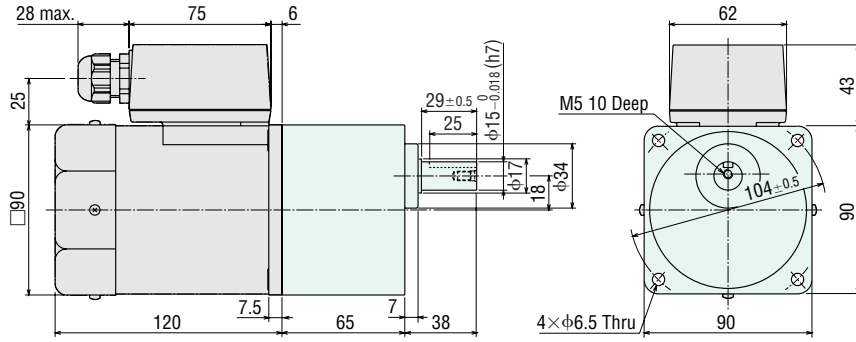
Mass: Motor 2.7 kg

Gearhead 1.5 kg



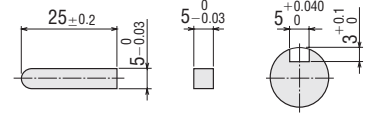
◇ Terminal Box Type ②

Mass: Motor 2.8 kg  
Gearhead 1.5 kg



◇ Key and Key Slot

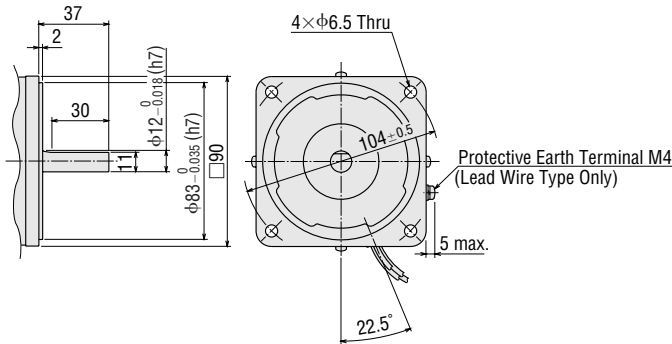
(The key is included with the gearhead)



● Use cable with a diameter of φ6 ~ φ12 mm.

◇ Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.

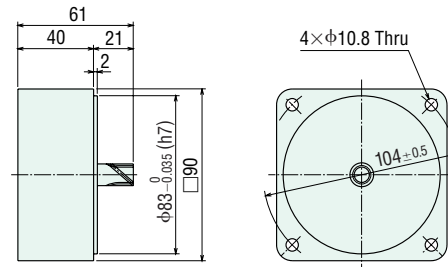


◇ Decimal Gearhead

Can be connected to **GE** pinion shaft type.

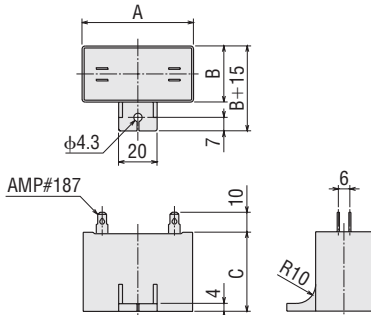
**5GE10XS**

Mass: 0.6 kg



◇ Capacitor

(Included with the motors)

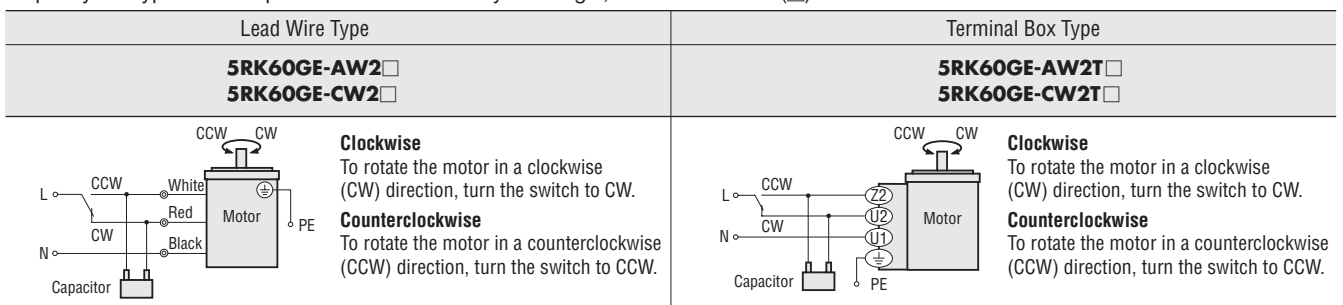


◇ Capacitor Dimensions (mm)

Model		Capacitor Model	A	B	C	Mass (g)	Capacitor Cap
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
<b>5RK60GE-AW2J</b> (5RK60A-AW2J)	<b>5RK60GE-AW2TJ</b> (5RK60A-AW2TJ)	CH250CFAUL2	58	35	50	140	Included
<b>5RK60GE-AW2U</b> (5RK60A-AW2U)	<b>5RK60GE-AW2TU</b> (5RK60A-AW2TU)	CH200CFAUL2	58	29	41	95	
<b>5RK60GE-CW2J</b> (5RK60A-CW2J)	<b>5RK60GE-CW2TJ</b> (5RK60A-CW2TJ)	CH60BFAUL	58	29	41	85	
<b>5RK60GE-CW2E</b> (5RK60A-CW2E)	<b>5RK60GE-CW2TE</b> (5RK60A-CW2TE)	CH50BFAUL	58	29	41	85	

■ Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Specify the type of the capacitor to be included by entering **J**, **U** or **E** in the box (□) within the model name.

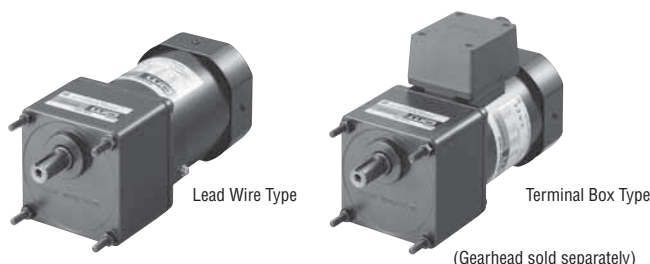


PE: Protective Earth

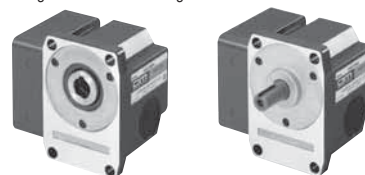
Note:

Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123



Right-angle gearheads (hollow shaft or solid shaft) can be combined.  
Right-Angle Gearheads → Page 108



Specifications – 30 Minutes Rating (RoHS)



Model		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Upper Model Name: Pinion Shaft Type	Lower Model Name ( ): Round Shaft Type								
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
TP 5RK90GE-AW2J (5RK90A-AW2J)	5RK90GE-AW2TJ (5RK90A-AW2TJ)	90	Single-Phase 100	50	1.85	630	700	1250	35
				60	2.16	590	585	1500	
TP 5RK90GE-AW2U (5RK90A-AW2U)	5RK90GE-AW2TU (5RK90A-AW2TU)	90	Single-Phase 110 Single-Phase 115	60	1.87	590	585	1500	30
					1.86				
TP 5RK90GE-CW2J (5RK90A-CW2J)	5RK90GE-CW2TJ (5RK90A-CW2TJ)	90	Single-Phase 200	50	0.91	600	730	1200	8.0
				60	1.09	590	605	1450	
TP 5RK90GE-CW3E (5RK90A-CW3E)	5RK90GE-CW3TE (5RK90A-CW3TE)	90	Single-Phase 220 Single-Phase 230	50	0.83	600	730	1200	7.0
				60	0.96	590	605	1450	
				50	0.83	600	730	1200	
				60	0.95	590	605	1450	

- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- TP: Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

Product Line

● Motor (RoHS)

Type	Model	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5RK90GE-AW2J	5RK90A-AW2J
	5RK90GE-AW2U	5RK90A-AW2U
	5RK90GE-CW2J	5RK90A-CW2J
	5RK90GE-CW3E	5RK90A-CW3E
Terminal Box	5RK90GE-AW2TJ	5RK90A-AW2TJ
	5RK90GE-AW2TU	5RK90A-AW2TU
	5RK90GE-CW2TJ	5RK90A-CW2TJ
	5RK90GE-CW3TE	5RK90A-CW3TE

● Gearhead/Right-Angle Gearhead (Sold Separately) (RoHS)

Type	Gearhead Model	Gear Ratio
Long Life/ Parallel Shaft	5GE□S	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	5GE10XS (Decimal gearhead)	
Right-Angle/ Hollow Shaft	5GE□RH	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
Right-Angle/ Solid Shaft	5GE□RA	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

## Gearmotor – Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the code that represents the terminal box type "T" in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 - 20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

### ◇ 50 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK90GE-AW2</b> □□J	<b>5GE</b> □□S	1.7	2.0	2.8	3.4	4.3	5.1	6.4	7.7	9.2	11.6	13.9	16.6	20	20	20	20	20	20	20	20
<b>5RK90GE-CW2</b> □□J <b>5RK90GE-CW3</b> □□E	<b>5GE</b> □□S	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20

### ◇ 60 Hz

Unit = N·m

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>5RK90GE-AW2</b> □□J <b>5RK90GE-AW2</b> □□U	<b>5GE</b> □□S	1.4	1.7	2.4	2.8	3.6	4.3	5.3	6.4	7.7	9.7	11.6	13.9	19.3	20	20	20	20	20	20	20
<b>5RK90GE-CW2</b> □□J <b>5RK90GE-CW3</b> □□E	<b>5GE</b> □□S	1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page 107

Gearhead → Page 107

## Permissible Load Inertia J for Gearhead

→ Page 107

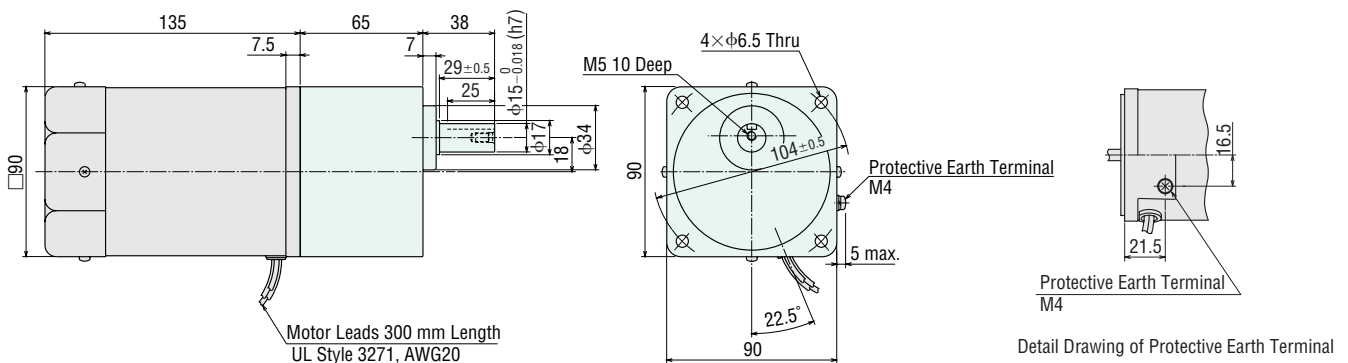
## Dimensions (Unit = mm)

Mounting screws are included with gearheads.

### ◇ Lead Wire Type ①

Mass: Motor 3.2 kg

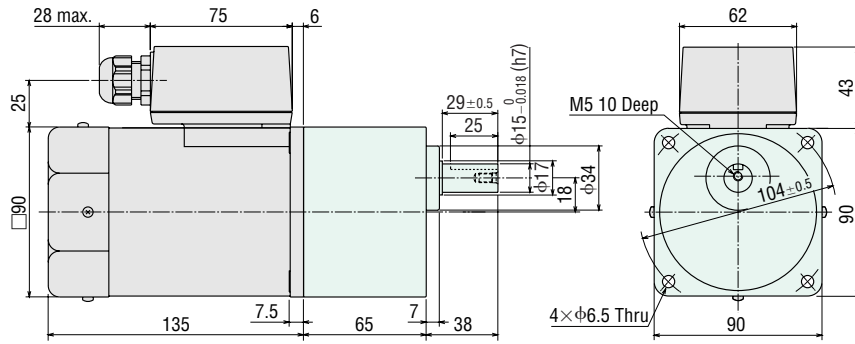
Gearhead 1.5 kg



◇ Terminal Box Type ②

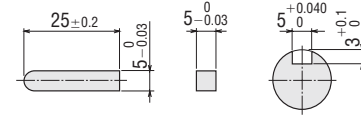
Mass: Motor 3.3 kg

Gearhead 1.5 kg



◇ Key and Key Slot

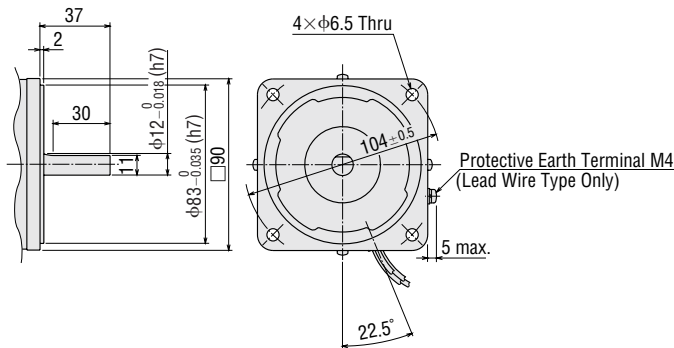
(The key is included with the gearhead)



● Use cable with a diameter of  $\phi 6 \sim \phi 12$  mm.

◇ Shaft Section of Round Shaft Type

The mass and motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft type.

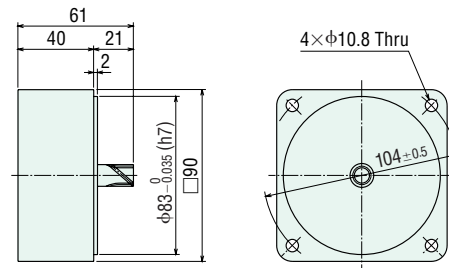


◇ Decimal Gearhead

Can be connected to **GE** pinion shaft type.

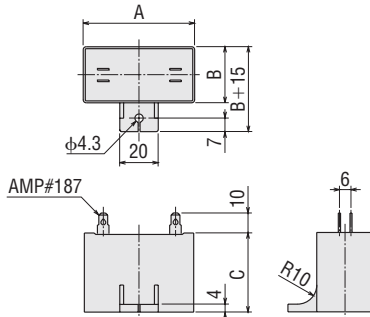
**5GE10XS**

Mass: 0.6 kg



◇ Capacitor

(Included with the motors)



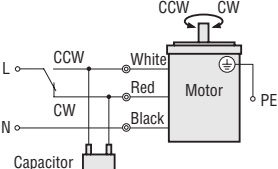
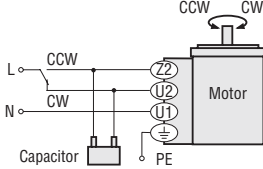
◇ Capacitor Dimensions (mm)

Model Upper Model Name: Pinion Shaft Type Lower Model Name ( ): Round Shaft Type		Capacitor Model	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
<b>5RK90GE-AW2J</b> (5RK90A-AW2J)	<b>5RK90GE-AW2TJ</b> (5RK90A-AW2TJ)	CH350CFAUL2	58	41	58	180	Included
<b>5RK90GE-AW2U</b> (5RK90A-AW2U)	<b>5RK90GE-AW2TU</b> (5RK90A-AW2TU)	CH300CFAUL2	58	35	50	140	
<b>5RK90GE-CW2J</b> (5RK90A-CW2J)	<b>5RK90GE-CW2TJ</b> (5RK90A-CW2TJ)	CH80BFAUL	58	35	50	130	
<b>5RK90GE-CW3E</b> (5RK90A-CW3E)	<b>5RK90GE-CW3TE</b> (5RK90A-CW3TE)	CH70BFAUL	58	35	50	130	



## ■ Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Specify the type of the capacitor to be included by entering **J** or **U** in the box (□) within the model name.

Lead Wire Type	Terminal Box Type
<p><b>5RK90GE-AW2</b> □  <b>5RK90GE-CW2J</b>  <b>5RK90GE-CW3E</b></p>	<p><b>5RK90GE-AW2T</b> □  <b>5RK90GE-CW2TJ</b>  <b>5RK90GE-CW3TE</b></p>
 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>	 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>

PE: Protective Earth

**Note:**

Connect a CR circuit to the forward/reverse select switch to protect the contact.

**EPCR1201-2** is available as an optional surge suppressor. → Page 123