Standard AC Motors

Constant Speed Motors

Induction Motors

Features and Types of Induction Motors

Features of Induction Motors

Optimal for Uni-Directional and Continuous Operation

These products are ideal for uni-directional continuous applications such as driving a conveyor.

Easy Operation

All you need is to connect a capacitor and plug the motor into an AC power supply, and the motor can be easily operated. (No capacitor is needed for a three-phase motor.)

Wide Variety of Products

The product lineup includes the World **K** Series and **BH** Series. We have models with motor outputs ranging from 6 W to 200 W, so you can surely find one that meets your specific application. In addition, products that conform to various safety standards as well as the RoHS Directive are also available.

Available to Combine with Various Gearheads

Combination with a gearhead allows the motor to slow down to a required speed or generate higher torque.

Types of Induction Motors

Series Name	Features, Lineup
World **K** Series	**Conforms to Major Safety Standards** All World **K** Series models have a built-in overheat protection device and conform to various safety standards. • **Applicable Standards** UL/CSA Standards Certified under the China Compulsory Certification System (CCC System) CE Marking (Low Voltage Directive) • **Motor Overheat Protection Device** Thermal protector, Impedance protected **Conforms to Global Power Supply Voltages** Our products support the power supply voltages used in many countries around the world, and they are readily available across the globe. **IP65 Terminal Box Type** Introducing new motors with terminal box conforming to IP65 rating for degree of protection. The terminal box provided at the back of the motor has an easy-to-wire construction. **Twice the Motor Bearing Life (Compared with a conventional model)** A motor's life is determined by its bearing. We adopted high-performance bearing grease to lubricate this important component. Life is twice as long as a conventional model **Protective Earth Terminal on Motor** Protective Earth Terminal **Lineup** Frame Size: □60 mm～□90 mm Output Power: Lead Wire Type: 6 W～90 W; Terminal Box Type: 6 W～90 W; IP65 Terminal Box Type: 6 W～40 W; 2-Pole, High-Speed Type: 40 W～150 W Voltage: Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC
BH Series	**Smallest Frame Size among 200 W Output Power** Achieves a high-output power of 200 W with a frame size of 104 mm. **Right-Angle Shaft Type Employing Hypoid Gear is Available** **"Combination Type" for Easy Mounting** The combination type is available with the motor and its gearhead pre-mounted. This enables easy mounting in equipment. **Conforms to the Safety Standards and Supports the Power Supply Voltages Used in Many Countries Around the World** **Tapped Hole at the Shaft End** The gearhead shaft features a tapped hole for convenient connection with loads. **Lineup** Frame Size: □104 mm Output Power: 200 W Type: Right-Angle Shaft, Hollow Shaft; Right-Angle Shaft, Solid Shaft; Parallel Shaft, Round Shaft Voltage: Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC

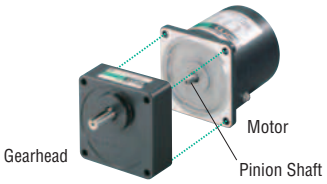
Features of Gearheads

Easy Speed Reduction and Torque Increase

Combination with a gearhead allows the motor to slow down to a required speed or generate higher torque.

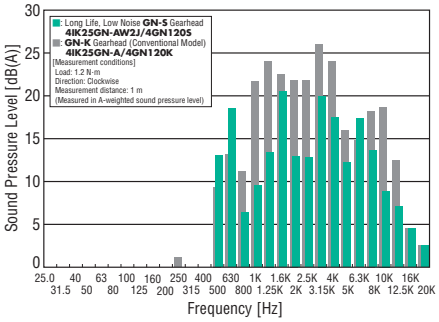
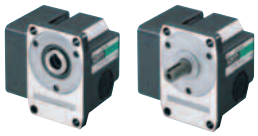
Wide Variety of Products

Gearheads come in various types including the long life, low noise gearhead and right-angle gearhead. Most gearheads are available with 20 different gear ratios from 1:3 to 1:180.



- Gearheads can be used with pinion shaft type motors.
- World **K** Series gearheads are sold separately.
  The **BH** Series is a combination type that comes with the gearhead pre-assembled.

Gearhead Types

Types	Features
Long Life, Low Noise **GN-S** Gearhead 	**Long Rated Life of 10000 Hours*** The **GN-S** gearhead achieves a long rated life of 10000 hours, twice the level of a conventional gearhead, by adopting a large, specially designed bearing and reinforced gears. *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35. **Low Noise Design** The **GN-S** gearhead generates less noise thanks to gears with a special shape and surface machining assembled with the use of advanced technology. **Applicable Products** 6 W, 15 W, 25 W or 40 W **GN** pinion motor  
Long Life **GE-S** Gearhead 	**Long Rated Life of 10000 Hours*** The **GE-S** gearhead achieves a long rated life of 10000 hours, twice the level of a conventional gearhead, by adopting a large, specially designed bearing and reinforced gears. *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35. ● The **GE-S** gearhead comes with a tapped hole at the tip of the shaft. **Applicable Products** 60 W or 90 W **GE** pinion motor
Right-Angle Gearheads → Page C-213 	**Ideal for Space Saving** The output shaft of the gearhead is perpendicular to the motor shaft, enabling space saving. **Hollow Shaft Type and Solid Shaft Type are Available** Select the type that best suits your specific application. ● The **GE** pinion solid shaft type comes with a tapped hole at the shaft end. **Applicable Products** **World K Series** 25 W, 40 W, 60 W or 90 W Pinion Motor

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Types of Induction Motors

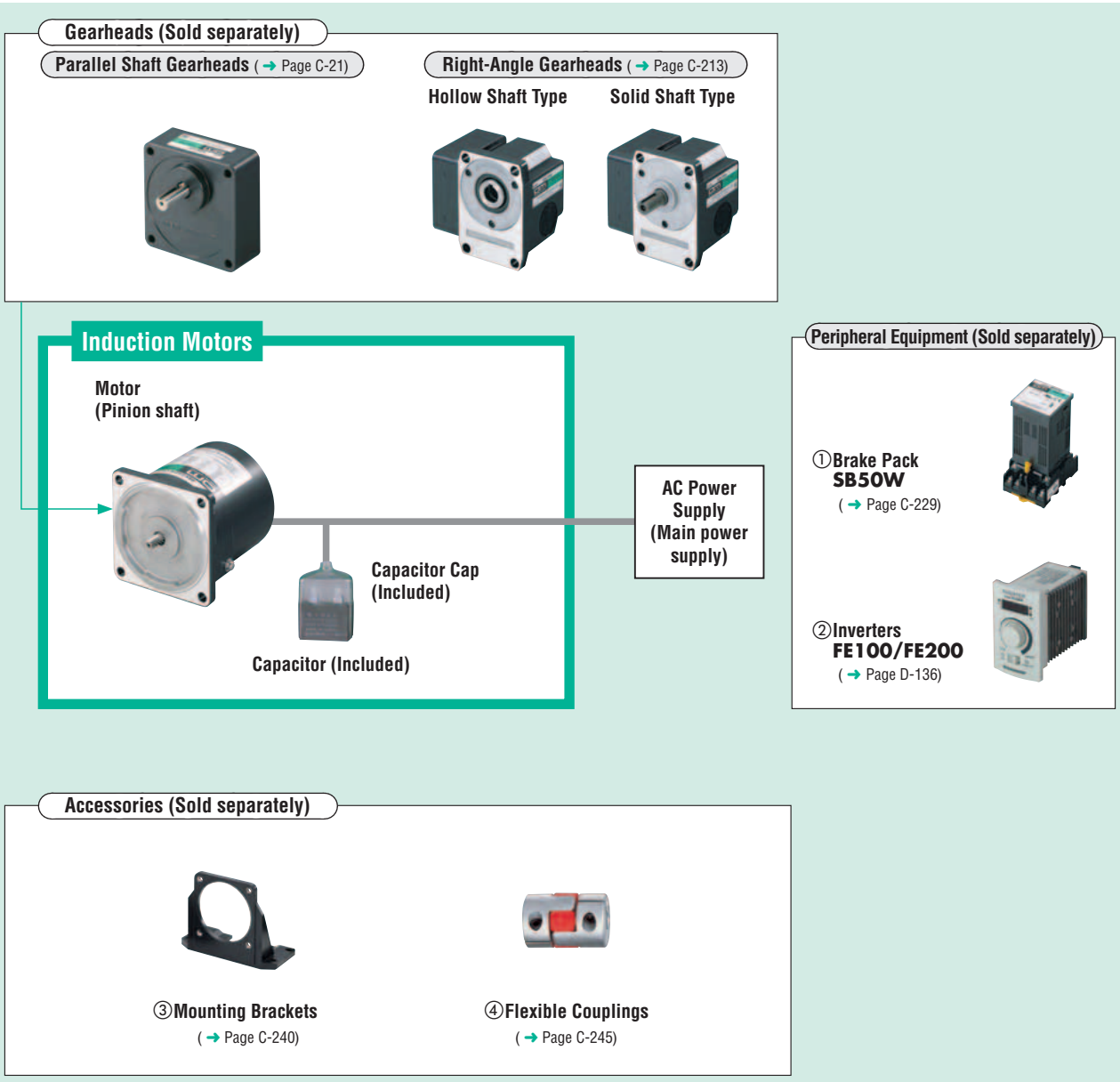
Series		Frame Size (mm), Output Power		□60	□70	□80			□90				□104
		Voltage (VAC)	Type	6 W	15 W	25 W	40 W	60 W	40 W	60 W	90 W	150 W	200 W
World **K** Series		Single-Phase 220/230	Lead Wire	●	●	●			●	●	●		
			Terminal Box	●	●	●			●	●	●		
		Three-Phase 200/220/230	Lead Wire	●	●	●			●	●	●		
			Terminal Box	●	●	●			●	●	●		
		Three-Phase 380/400/415	Lead Wire			●			●	●	●		
			Terminal Box			●			●	●	●		
	2-Pole, High-Speed Type	Single-Phase 220/230	Lead Wire				●	●		●	●	●	
	IP65 Terminal Box Type	Single-Phase 220/230	Terminal Box	●	●	●			●				
		Three-Phase 200/220/230	Terminal Box	●	●	●			●				
BH Series		Single-Phase 220/230	Terminal Box										●
		Three-Phase 200/220/230	Terminal Box										●
		Three-Phase 380/400/415	Terminal Box										●

Types of Gearheads

Gearheads			Applicable Motor			Rated Life* (hours)	Low Noise
Type of Gearhead		Type of Pinion	Series Name	Output Power	Type of Pinion		
Parallel Shaft	Long Life, Low Noise **GN-S** Gearhead	**GN** Type Pinion Shaft	World **K** Series	6 W～40 W	**GN** Type Pinion Shaft	10000	●
	Long Life **GE-S** Gearhead	**GE** Type Pinion Shaft	World **K** Series	60 W, 90 W	**GE** Type Pinion Shaft	10000	
Right-Angle Shaft	Hollow Shaft Gearhead	**GN** Type Pinion Shaft	World **K** Series	25 W, 40 W	**GN** Type Pinion Shaft	5000	
		GE Type Pinion Shaft	World **K** Series	60 W, 90 W	**GE** Type Pinion Shaft	5000	
	Solid Shaft Gearhead	**GN** Type Pinion Shaft	World **K** Series	25 W, 40 W	**GN** Type Pinion Shaft	5000	
		GE Type Pinion Shaft	World **K** Series	60 W, 90 W	**GE** Type Pinion Shaft	5000	

*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

System Configuration



Number	Name	Overview
①	Brake Pack	Use the brake pack to stop the motor instantaneously, perform bi-directional operation, and for other applications.
②	Inverters	Combine this inverter with a three-phase motor for easy speed control. It comes equipped with a digital display.
③	Mounting Brackets	Dedicated mounting bracket for the motor and gearhead.
④	Flexible Couplings	Clamp type coupling for connecting the motor/gearhead shaft with the driven shaft.

●System Configuration Example

Induction Motor (Pinion shaft)	Sold Separately		Sold Separately	
	Parallel Shaft Gearhead	+	Mounting Bracket	Flexible Coupling
4IK25GN-CW2E	4GN25S		SOL4M5	MCL301012

●Gearheads cannot be combined with round shaft type motors.

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

Product Number Code

World K Series

5 I K 40 GN - CW 2 T E

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Motor Frame Size	**2**: 60 mm **3**: 70 mm **4**: 80 mm **5**: 90 mm
②	Motor Type	**I**: Induction Motor
③	Series Name	**K**: **K** Series
④	Output Power (W)	(Example) **40**: 40 W
⑤	Motor Shaft Type, Type of Pinion	**A**: Round Shaft **GN**: **GN** Type Pinion **GE**: **GE** Type Pinion
⑥	Power Supply Voltage and Number of Poles	**AW**: Single-Phase 100 VAC, 110/115 VAC 4 Poles **BW**: Single-Phase 100 VAC, 110/115 VAC 2 Poles **CW**: Single-Phase 200 VAC, 220/230 VAC 4 Poles **DW**: Single-Phase 200 VAC 220/230 VAC 2 Poles **SW**: Three-Phase 200/220/230 VAC 4 Poles **TW**: Three-Phase 200/220/230 VAC 2 Poles **UW**: Three-Phase 380/400/415 VAC 4 Poles
⑦	**2**, **3**: RoHS Directive-Compliant	
⑧	**T**, **T2**, **B**: Terminal Box Type	
⑨	Included Capacitor	**J**: Capacitor for Single-Phase 100 VAC and 200 VAC **U**: Capacitor for Single-Phase 110/115 VAC **E**: Capacitor for Single-Phase 220/230 VAC Blank: Three-Phase

● The product name listed on the motor nameplate does not include the code (**J**, **U** and **E**) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
(Example) Product Name: **5IK40GN-CW2E** ➜ Motor nameplate and product approved under various safety standards: **5IK40GN-CW2**

Gearheads

5 GN 50 S

① ② ③ ④

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

World K Series IP65 Terminal Box Type

4 I K 25 E B - 18 S S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Motor Frame Size	**2**: 60 mm **3**: 70 mm **4**: 80 mm **5**: 90 mm
②	Motor Type	**I**: Induction Motor
③	Series Name	**K**: **K** Series
④	Output Power (W)	(Example) **25**: 25 W
⑤	Power Supply Voltage	**A**: Single-Phase 100 VAC **F**: Single-Phase 110/115 VAC **C**: Single-Phase 200 VAC **E**: Single-Phase 220/230 VAC **S**: Three-Phase 200/220/230 VAC
⑥	**B**: Terminal Box Type	
⑦	Gear Ratio	Number: Gear Ratio of Combination Type
⑧	Gearhead Type (Combination type only)	**S**: Parallel Shaft
⑨	Thermal Protector Specifications	Blank: Automatic Return Type **S**: Signal Type

BH Series

BH I 6 2 E T - 100 RH

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series Name	**BH**: **BH** Series
②	Motor Type	**I**: Induction Motor
③	Motor Frame Size	**6**: 104 mm
④	Output Power (W)	**2**: 200 W
⑤	Power Supply Voltage	**A**: Single-Phase 100 VAC **F**: Single-Phase 110/115 VAC **C**: Single-Phase 200 VAC **E**: Single-Phase 220/230 VAC **S**: Three-Phase 200/220/230 VAC **U**: Three-Phase 380/400/415 VAC
⑥	Blank: Cable Type **T**, **T2**: Terminal Box Type	
⑦	Gear Ratio, Motor Shaft Type	**A**: Round Shaft Number: Gear Ratio of Combination Type
⑧	Gearhead Type (Combination type only)	**RH**: Right-Angle Shaft, Hollow Shaft Type **RA**: Right-Angle Shaft, Solid Shaft Type Blank: Parallel Shaft

Variation of Induction Motors

World **K** Series

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇1 W, 3 W

Type / Power Supply Voltage	Lead Wire Type (1 W)		Lead Wire Type (3 W)	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**0IK1GN-AW2J**	**0IK1A-AW2J**	**0IK3GN-BW2J**	**0IK3A-BW2J**
Single-Phase 110/115 VAC	**0IK1GN-AW3U**	**0IK1A-AW3U**	**0IK3GN-BW3U**	**0IK3A-BW3U**
Single-Phase 200 VAC	**0IK1GN-CW2J**	**0IK1A-CW2J**	**0IK3GN-DW2J**	**0IK3A-DW2J**

◇6 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**2IK6GN-AW2J**	**2IK6A-AW2J**	**2IK6GN-AW2BJ**	**2IK6A-AW2BJ**
Single-Phase 110/115 VAC	**2IK6GN-AW2U**	**2IK6A-AW2U**	**2IK6GN-AW2BU**	**2IK6A-AW2BU**
Single-Phase 200 VAC	**2IK6GN-CW2J**	**2IK6A-CW2J**	**2IK6GN-CW2BJ**	**2IK6A-CW2BJ**
Single-Phase 220/230 VAC	**2IK6GN-CW2E**	**2IK6A-CW2E**	**2IK6GN-CW2BE**	**2IK6A-CW2BE**
Three-Phase 200/220/230 VAC	**2IK6GN-SW2**	**2IK6A-SW2**	**2IK6GN-SW2B**	**2IK6A-SW2B**

◇15 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**3IK15GN-AW2J**	**3IK15A-AW2J**	**3IK15GN-AW2BJ**	**3IK15A-AW2BJ**
Single-Phase 110/115 VAC	**3IK15GN-AW2U**	**3IK15A-AW2U**	**3IK15GN-AW2BU**	**3IK15A-AW2BU**
Single-Phase 200 VAC	**3IK15GN-CW2J**	**3IK15A-CW2J**	**3IK15GN-CW2BJ**	**3IK15A-CW2BJ**
Single-Phase 220/230 VAC	**3IK15GN-CW2E**	**3IK15A-CW2E**	**3IK15GN-CW2BE**	**3IK15A-CW2BE**
Three-Phase 200/220/230 VAC	**3IK15GN-SW2**	**3IK15A-SW2**	**3IK15GN-SW2B**	**3IK15A-SW2B**

◇25 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**4IK25GN-AW2J**	**4IK25A-AW2J**	**4IK25GN-AW2TJ**	**4IK25A-AW2TJ**
Single-Phase 110/115 VAC	**4IK25GN-AW2U**	**4IK25A-AW2U**	**4IK25GN-AW2TU**	**4IK25A-AW2TU**
Single-Phase 200 VAC	**4IK25GN-CW2J**	**4IK25A-CW2J**	**4IK25GN-CW2TJ**	**4IK25A-CW2TJ**
Single-Phase 220/230 VAC	**4IK25GN-CW2E**	**4IK25A-CW2E**	**4IK25GN-CW2TE**	**4IK25A-CW2TE**
Three-Phase 200/220/230 VAC	**4IK25GN-SW2**	**4IK25A-SW2**	**4IK25GN-SW2T**	**4IK25A-SW2T**
Three-Phase 380/400/415 VAC	**4IK25GN-UW2**	**4IK25A-UW2**	**4IK25GN-UW2T2**	**4IK25A-UW2T2**

◇40 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**5IK40GN-AW2J**	**5IK40A-AW2J**	**5IK40GN-AW2TJ**	**5IK40A-AW2TJ**
Single-Phase 110/115 VAC	**5IK40GN-AW2U**	**5IK40A-AW2U**	**5IK40GN-AW2TU**	**5IK40A-AW2TU**
Single-Phase 200 VAC	**5IK40GN-CW2J**	**5IK40A-CW2J**	**5IK40GN-CW2TJ**	**5IK40A-CW2TJ**
Single-Phase 220/230 VAC	**5IK40GN-CW2E**	**5IK40A-CW2E**	**5IK40GN-CW2TE**	**5IK40A-CW2TE**
Three-Phase 200/220/230 VAC	**5IK40GN-SW2**	**5IK40A-SW2**	**5IK40GN-SW2T**	**5IK40A-SW2T**
Three-Phase 380/400/415 VAC	**5IK40GN-UW2**	**5IK40A-UW2**	**5IK40GN-UW2T2**	**5IK40A-UW2T2**

◇60 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**5IK60GE-AW2J**	**5IK60A-AW2J**	**5IK60GE-AW2TJ**	**5IK60A-AW2TJ**
Single-Phase 110/115 VAC	**5IK60GE-AW2U**	**5IK60A-AW2U**	**5IK60GE-AW2TU**	**5IK60A-AW2TU**
Single-Phase 200 VAC	**5IK60GE-CW2J**	**5IK60A-CW2J**	**5IK60GE-CW2TJ**	**5IK60A-CW2TJ**
Single-Phase 220/230 VAC	**5IK60GE-CW2E**	**5IK60A-CW2E**	**5IK60GE-CW2TE**	**5IK60A-CW2TE**
Three-Phase 200/220/230 VAC	**5IK60GE-SW2**	**5IK60A-SW2**	**5IK60GE-SW2T**	**5IK60A-SW2T**
Three-Phase 380/400/415 VAC	**5IK60GE-UW2**	**5IK60A-UW2**	**5IK60GE-UW2T2**	**5IK60A-UW2T2**

◇90 W

Type / Power Supply Voltage	Lead Wire Type		Terminal Box Type	
	Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC	**5IK90GE-AW2J**	**5IK90A-AW2J**	**5IK90GE-AW2TJ**	**5IK90A-AW2TJ**
Single-Phase 110/115 VAC	**5IK90GE-AW2U**	**5IK90A-AW2U**	**5IK90GE-AW2TU**	**5IK90A-AW2TU**
Single-Phase 200 VAC	**5IK90GE-CW2J**	**5IK90A-CW2J**	**5IK90GE-CW2TJ**	**5IK90A-CW2TJ**
Single-Phase 220/230 VAC	**5IK90GE-CW2E**	**5IK90A-CW2E**	**5IK90GE-CW2TE**	**5IK90A-CW2TE**
Three-Phase 200/220/230 VAC	**5IK90GE-SW2**	**5IK90A-SW2**	**5IK90GE-SW2T**	**5IK90A-SW2T**
Three-Phase 380/400/415 VAC	**5IK90GE-UW2**	**5IK90A-UW2**	**5IK90GE-UW2T2**	**5IK90A-UW2T2**

●World **K** Series IP65 Terminal Box Type

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇6 W

Type / Power Supply Voltage	Combination Type	Round Shaft Type
Single-Phase 100 VAC	**2IK6AB-□S**	**2IK6A-AW2BJ**
Single-Phase 110/115 VAC	**2IK6FB-□S**	**2IK6A-AW2BU**
Single-Phase 200 VAC	**2IK6CB-□S**	**2IK6A-CW2BJ**
Single-Phase 220/230 VAC	**2IK6EB-□S**	**2IK6A-CW2BE**
Three-Phase 200/220/230 VAC	**2IK6SB-□S**	**2IK6A-SW2B**

◇15 W

Type / Power Supply Voltage	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Single-Phase 100 VAC	**3IK15AB-□S**	**3IK15A-AW2BJ**	**3IK15AB-□SS**	**3IK15A-AW2BSJ**
Single-Phase 110/115 VAC	**3IK15FB-□S**	**3IK15A-AW2BU**	**3IK15FB-□SS**	**3IK15A-AW2BSU**
Single-Phase 200 VAC	**3IK15CB-□S**	**3IK15A-CW2BJ**	**3IK15CB-□SS**	**3IK15A-CW2BSJ**
Single-Phase 220/230 VAC	**3IK15EB-□S**	**3IK15A-CW2BE**	**3IK15EB-□SS**	**3IK15A-CW2BSE**
Three-Phase 200/220/230 VAC	**3IK15SB-□S**	**3IK15A-SW2B**	**3IK15SB-□SS**	**3IK15A-SW2BS**

◇25 W

Type / Power Supply Voltage	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Single-Phase 100 VAC	**4IK25AB-□S**	**4IK25A-AW2BJ**	**4IK25AB-□SS**	**4IK25A-AW2BSJ**
Single-Phase 110/115 VAC	**4IK25FB-□S**	**4IK25A-AW2BU**	**4IK25FB-□SS**	**4IK25A-AW2BSU**
Single-Phase 200 VAC	**4IK25CB-□S**	**4IK25A-CW2BJ**	**4IK25CB-□SS**	**4IK25A-CW2BSJ**
Single-Phase 220/230 VAC	**4IK25EB-□S**	**4IK25A-CW2BE**	**4IK25EB-□SS**	**4IK25A-CW2BSE**
Three-Phase 200/220/230 VAC	**4IK25SB-□S**	**4IK25A-SW2B**	**4IK25SB-□SS**	**4IK25A-SW2BS**

◇40 W

Type / Power Supply Voltage	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Single-Phase 100 VAC	**5IK40AB-□S**	**5IK40A-AW2BJ**	**5IK40AB-□SS**	**5IK40A-AW2BSJ**
Single-Phase 110/115 VAC	**5IK40FB-□S**	**5IK40A-AW2BU**	**5IK40FB-□SS**	**5IK40A-AW2BSU**
Single-Phase 200 VAC	**5IK40CB-□S**	**5IK40A-CW2BJ**	**5IK40CB-□SS**	**5IK40A-CW2BSJ**
Single-Phase 220/230 VAC	**5IK40EB-□S**	**5IK40A-CW2BE**	**5IK40EB-□SS**	**5IK40A-CW2BSE**
Three-Phase 200/220/230 VAC	**5IK40SB-□S**	**5IK40A-SW2B**	**5IK40SB-□SS**	**5IK40A-SW2BS**

●**BH** Series

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇Combination Type

Type / Power Supply Voltage	Terminal Box Type, Right-Angle Gearhead		Terminal Box Type, Parallel Shaft Type
	Hollow Shaft Type	Solid Shaft Type	
Single-Phase 100 VAC	**BHI62AT-□RH**	**BHI62AT-□RA**	**BHI62AT-□**
Single-Phase 110/115 VAC	**BHI62FT-□RH**	**BHI62FT-□RA**	**BHI62FT-□**
Single-Phase 200 VAC	**BHI62CT-□RH**	**BHI62CT-□RA**	**BHI62CT-□**
Single-Phase 220/230 VAC	**BHI62ET-□RH**	**BHI62ET-□RA**	**BHI62ET-□**
Three-Phase 200/220/230 VAC	**BHI62ST-□RH**	**BHI62ST-□RA**	**BHI62ST-□**
Three-Phase 380/400/415 VAC	**BHI62UT2-□RH**	**BHI62UT2-□RA**	**BHI62UT2-□**

◇Round Shaft Type

Type / Power Supply Voltage	Terminal Box Type
Single-Phase 100 VAC	**BHI62AT-A**
Single-Phase 110/115 VAC	**BHI62FT-A**
Single-Phase 200 VAC	**BHI62CT-A**
Single-Phase 220/230 VAC	**BHI62ET-A**
Three-Phase 200/220/230 VAC	**BHI62ST-A**
Three-Phase 380/400/415 VAC	**BHI62UT2-A**

● A number indicating the gear ratio is entered where the box □ is located within the product name.

●World **K** Series 2-Pole, High-Speed Type

For the single-phase 100 VAC, the single-phase 110/115 VAC, the single-phase 200 VAC and the three-phase 200/220/230 VAC models, please contact the nearest Oriental Motor sales office.

◇40 W

Type / Power Supply Voltage	Lead Wire Type (Round Shaft Type)
Single-Phase 100 VAC	**4IK40A-BW2J**
Single-Phase 110/115 VAC	**4IK40A-BW2U**
Single-Phase 200 VAC	**4IK40A-DW2J**
Single-Phase 220/230 VAC	**4IK40A-DW3E**

◇60 W

Type / Power Supply Voltage	Lead Wire Type (Round Shaft Type)	
Single-Phase 100 VAC	**4IK60A-BW2J**	**5IK60A-BW2J**
Single-Phase 110/115 VAC	**4IK60A-BW2U**	**5IK60A-BW2U**
Single-Phase 200 VAC	**4IK60A-DW2J**	**5IK60A-DW2J**
Single-Phase 220/230 VAC	**4IK60A-DW3E**	**5IK60A-DW3E**
Three-Phase 200/220/230 VAC	–	**5IK60A-TW2**

◇90 W

Type / Power Supply Voltage	Lead Wire Type (Round Shaft Type)
Single-Phase 100 VAC	**5IK90A-BW2J**
Single-Phase 110/115 VAC	**5IK90A-BW2U**
Single-Phase 200 VAC	**5IK90A-DW2J**
Single-Phase 220/230 VAC	**5IK90A-DW3E**
Three-Phase 200/220/230 VAC	**5IK90A-TW2**

◇150 W

Type / Power Supply Voltage	Lead Wire Type (Round Shaft Type)	Terminal Box Type (Round Shaft Type)
Single-Phase 100 VAC	**5IK150A-BW2J**	–
Single-Phase 110/115 VAC	**5IK150A-BW2U**	–
Single-Phase 200 VAC	**5IK150A-DW2J**	–
Single-Phase 220/230 VAC	**5IK150A-DW3E**	–
Three-Phase 200/220/230 VAC	**5IK150A-TW2**	**5IK150A-TW2T**

● A number indicating the gear ratio is entered where the box □ is located within the product name.

General Specifications

World K Series - 6 W to 90 W

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC (2 kVAC for three-phase 380/400/415 VAC) at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 80°C or less (70°C or less for three-phase type) using the resistance change method after rated operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Overheat Protection	6 W Type: Impedance Protected Other Types: Built-In Thermal Protector (Automatic return type) Open: 130±5°C, Close: 82±15°C Three-Phase 15 W Type, IP65 Terminal Box Type Open: 130±5°C, Close: 90±15°C (40 W Type: 82±15°C) Three-Phase 380/400/415 VAC Type Open: 130±5°C, Close: 83±15°C
Operating Ambient Temperature	−10～+40°C (Three-Phase 200 VAC: −10～+50°C) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead Wire Type: IP20 Terminal Box Type (25 W, 40 W, 60 W, 90 W): IP54 (Except for the installation surface) IP65 Terminal Box Type (6 W, 15 W, 25 W, 40 W): IP65 (Except for the installation surface)

*Heat radiation plate size (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
6 W Type	115×115	5
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W, 90 W Type	200×200	

BH Series

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC (2 kVAC for three-phase 380/400/415 VAC) at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 70°C or less using the resistance change method after rated operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Overheat Protection	Built-In Thermal Protector (Automatic return type) Open: 150±5°C, Close: 96±15°C Three-Phase 380/400/415 VAC Type Open: 130±5°C, Close: 83±15°C
Operating Ambient Temperature	−10～+40°C (Three-Phase 200 VAC: −10～+50°C) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead Wire Type: IP40 Terminal Box Type: IP54 (Excluding the installation surface of the round shaft type)

*Heat Radiation Plate Size: 230×230 mm, Thickness: 5 mm (Material: Aluminum)

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.

<table>
<tr><th colspan="2">Lead Wire Type</th><th colspan="2">Terminal Box Type</th></tr>
<tr><th>Single-Phase 220/230 VAC</th><th>Three-Phase 200/220/230 VAC
Three-Phase 380/400/415 VAC</th><th>Single-Phase 220/230 VAC</th><th>Three-Phase 200/220/230 VAC
Three-Phase 380/400/415 VAC</th></tr>
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 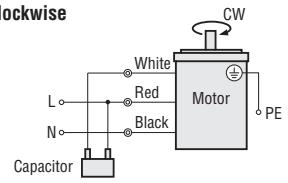
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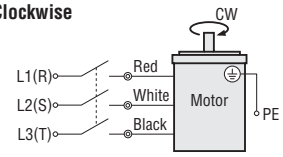
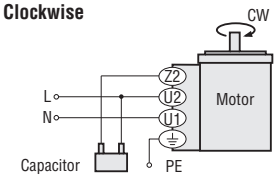
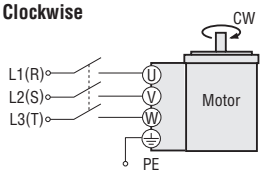
 

Counterclockwise
To change the rotation direction, change any two connections between L1(R), L2(S) and L3(T).</td>
<td>Clockwise
 
</td>
<td rowspan="2">Clockwise
 

Counterclockwise
To change the rotation direction, change any two connections between L1(R), L2(S) and L3(T).</td>
</tr>
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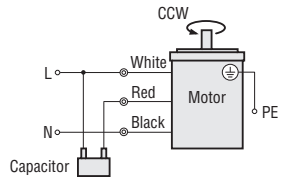
<td>Counterclockwise
 
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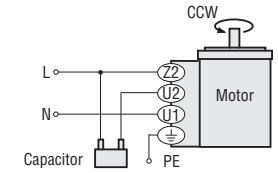
 
</td>
</tr>
</table>

PE: Protective Earth

Note

● Change the direction of single-phase motor rotation only after bringing the motor to a stop.
If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.

● How to connect a capacitor ➜ Page C-255

Induction Motors

6 W

□60 mm


Lead Wire Type


Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
ZP **2IK6GN-CW2E** (**2IK6A-CW2E**)	ZP **2IK6GN-CW2BE** (**2IK6A-CW2BE**)	6	Single-Phase 220	50	0.103	38	49	1150	0.6
				60	0.091	40	41	1450	
			Single-Phase 230	50	0.107	45	49	1200	
				60	0.094	40	41	1450	
ZP **2IK6GN-SW2** (**2IK6A-SW2**)	ZP **2IK6GN-SW2B** (**2IK6A-SW2B**)	6	Three-Phase 200	50	0.081	49	49	1200	–
				60	0.072	41	41	1400	
			Three-Phase 220	60	0.076	41	41	1500	
			Three-Phase 230	60	0.079	41	41	1500	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

ZP: These products are impedance protected.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	**2IK6GN-CW2E** **2IK6GN-SW2**	**2IK6A-CW2E** **2IK6A-SW2**	IP20
Terminal Box	**2IK6GN-CW2BE** **2IK6GN-SW2B**	**2IK6A-CW2BE*** **2IK6A-SW2B***	IP65

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	**2IK6GN-CW2E**	**2IK6A-CW2E**
	2IK6GN-SW2	**2IK6A-SW2**
Terminal Box	**2IK6GN-CW2BE**	**2IK6A-CW2BE**
	2IK6GN-SW2B	**2IK6A-SW2B**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise **GN-S** Gearhead	**2GN□S**	**3~180**
		2GN10XS (Decimal gearhead)	

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
Gearhead, Mounting Screws, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Page
Features C-20 / System Configuration C-23 / Product Line C-30 / Specifications C-30
Dimensions C-31 / Connection Diagrams C-29

Permissible Torque When Gearhead is Attached

- A code (**B**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torque is 3 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
Motor/ Gearhead	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**
2IK6GN-CW2□E 2IK6GN-SW2□	**2GN□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

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/ Gearhead	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**
2IK6GN-CW2□E 2IK6GN-SW2□	**2GN□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

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

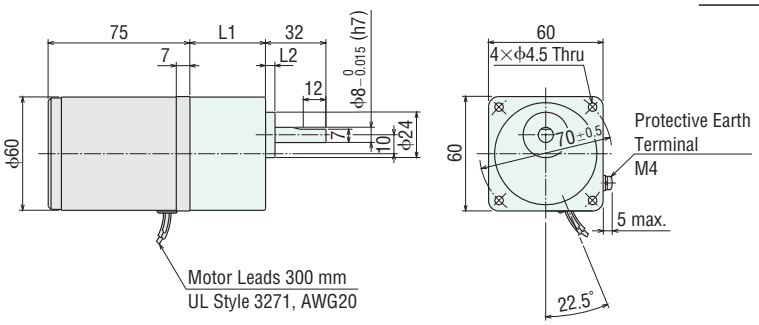
➜ Page C-17

Dimensions (Unit = mm)

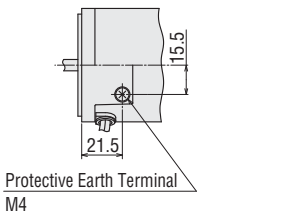
- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box ☐ is located within the product name.

◇Lead Wire Type ①

Mass: Motor 0.7 kg
Gearhead 0.4 kg



Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
2IK6GN-CW2E 2IK6GN-SW2	**2GN□S**	**3～18**	30	5
		25～180	40	

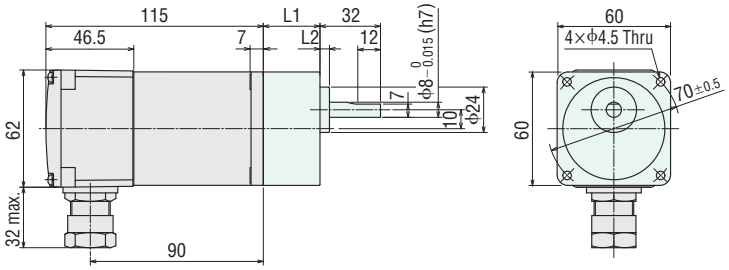


Detail Drawing of Protective Earth Terminal

◇Terminal Box Type ②

Mass: Motor 0.9 kg
Gearhead 0.4 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
2IK6GN-CW2BE **2IK6GN-SW2B**	**2GN□S**	**3～18**	30	5
		25～180	40	

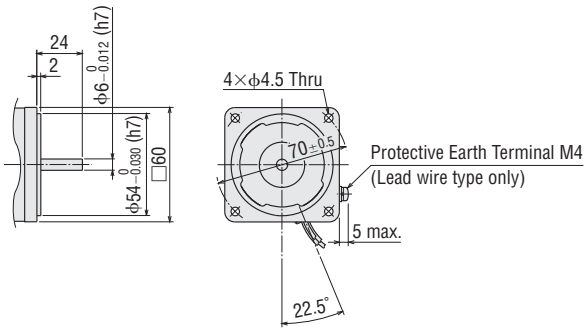


- Applicable cables diameter is ϕ8～ϕ12.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 0.7 kg (Lead wire type)
0.9 kg (Terminal box type)

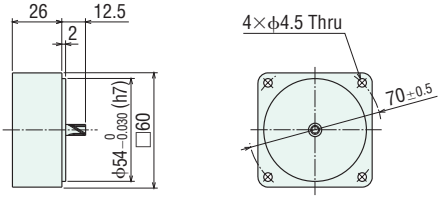


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

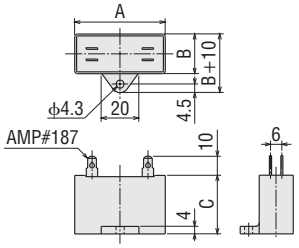
2GN10XS

Mass: 0.2 kg



◇Capacitor

(Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
2IK6GN-CW2E (**2IK6A-CW2E**)	**2IK6GN-CW2BE** (**2IK6A-CW2BE**)	CH06BFAUL	31	14.5	23.5	18	Included

Connection Diagrams

➜ Page C-29

Peripheral Equipment

Instantaneous Stop

Brake Pack
➜ Page C-229

Speed Control

Inverters
➜ Page D-136

Accessories

Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

Induction Motors

15 W
□70 mm


Lead Wire Type


Terminal Box Type

Gearhead shown in the photograph is sold separately.

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(TP) **3IK15GN-CW2E** **(3IK15A-CW2E)**	(TP) **3IK15GN-CW2BE** **(3IK15A-CW2BE)**	15	Single-Phase 220	50	0.19	70	125	1200	1.0
				60	0.16	65	105	1450	
			Single-Phase 230	50	0.19	75	125	1200	
				60	0.16	65	105	1450	
(TP) **3IK15GN-SW2** **(3IK15A-SW2)**	(TP) **3IK15GN-SW2B** **(3IK15A-SW2B)**	15	Three-Phase 200	50	0.17	110	110	1350	–
				60	0.14	85	100	1600	
			Three-Phase 220	60	0.15	100	100	1650	
			Three-Phase 230	60	0.16	100	100	1650	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	**3IK15GN-CW2E** **3IK15GN-SW2**	**3IK15A-CW2E** **3IK15A-SW2**	IP20
Terminal Box	**3IK15GN-CW2BE** **3IK15GN-SW2B**	**3IK15A-CW2BE*** **3IK15A-SW2B***	IP65

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	**3IK15GN-CW2E**	**3IK15A-CW2E**
	3IK15GN-SW2	**3IK15A-SW2**
Terminal Box	**3IK15GN-CW2BE**	**3IK15A-CW2BE**
	3IK15GN-SW2B	**3IK15A-SW2B**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-Phase Motors only

Parallel Shaft Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise **GN-S** Gearhead	**3GN□S**	**3~180**
		3GN10XS (Decimal gearhead)	

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
Gearhead, Mounting Screws, Parallel Key, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Permissible Torque When Gearhead is Attached

- A code (**B**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ☐ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torque is 5 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
Motor/ Gearhead	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**
3IK15GN-CW2☐E / **3GN☐S**		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
3IK15GN-SW2☐ / **3GN☐S**		0.27	0.32	0.45	0.53	0.67	0.80	1.1	1.3	1.6	2.0	2.4	2.9	3.6	4.4	5	5	5	5	5	5

◇60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/ Gearhead	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**
3IK15GN-CW2☐E / **3GN☐S**		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
3IK15GN-SW2☐ / **3GN☐S**		0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

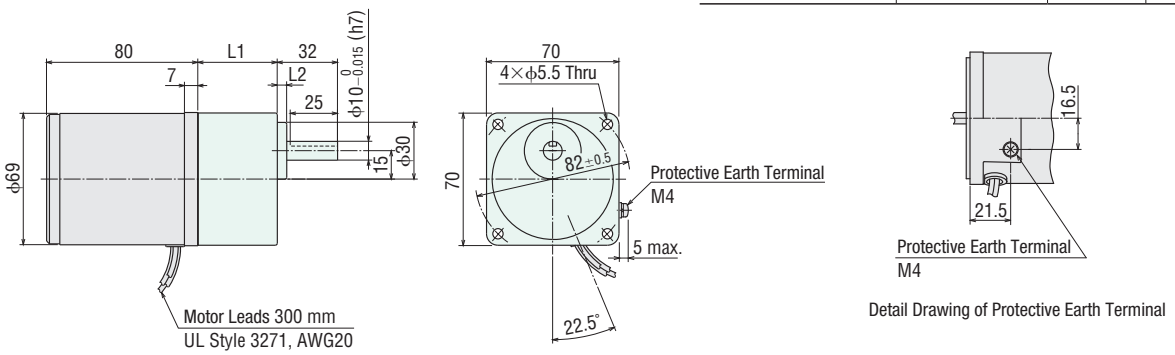
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box ☐ is located within the product name.

◇Lead Wire Type①

Mass: Motor 1.1 kg
Gearhead 0.55 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
3IK15GN-CW2E **3IK15GN-SW2**	**3GN☐S**	**3~18**	32	5
		25~180	42	

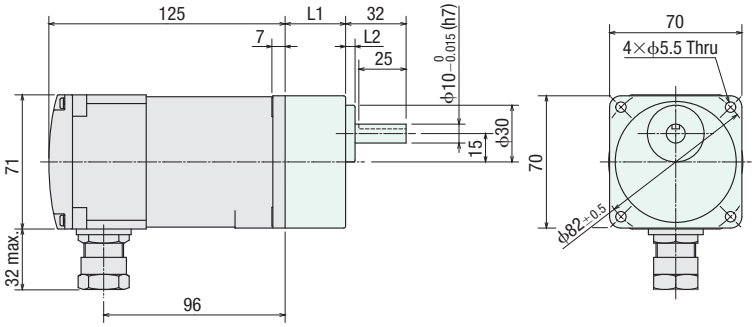


Detail Drawing of Protective Earth Terminal

◇Terminal Box Type②

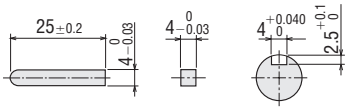
Mass: Motor 1.4 kg
Gearhead 0.55 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
3IK15GN-CW2BE **3IK15GN-SW2B**	**3GN□S**	**3～18**	32	5
		25～180	42	



- Applicable cables diameter is φ8～φ12.
- Details of terminal box ➜ Page C-255

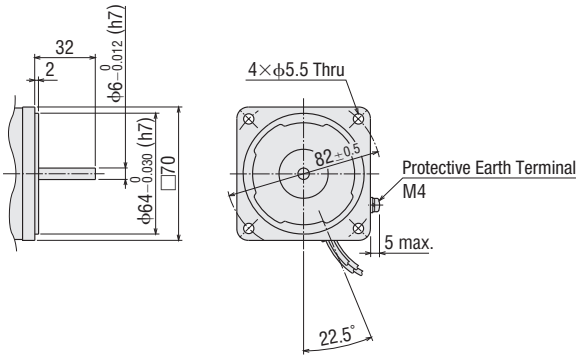
◇Key and Key Slot (The key is included with the gearhead.)



◇Shaft Section of Round Shaft Type

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

Mass: 1.1 kg (Lead Wire Type)
1.4 kg (Terminal Box Type)

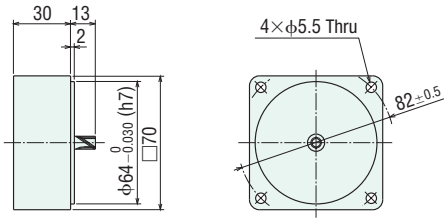


◇Decimal Gearhead

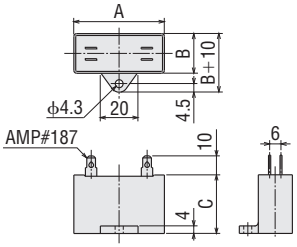
This can be attached to the **GN** pinion shaft type.

3GN10XS

Mass: 0.3 kg



◇Capacitor
(Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
3IK15GN-CW2E (**3IK15A-CW2E**)	**3IK15GN-CW2BE** (**3IK15A-CW2BE**)	CH10BFAUL	37	18	27	27	Included

Connection Diagrams

➜ Page C-29

Peripheral Equipment

Instantaneous Stop
Brake Pack
➜ Page C-229

Speed Control
Inverters
➜ Page D-136

Accessories
Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

Induction Motors

25 W
□80 mm


Lead Wire Type


Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name ( ): Round Shaft Type			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **4IK25GN-CW2E** (**4IK25A-CW2E**)	TP **4IK25GN-CW2TE** (**4IK25A-CW2TE**)	–	25	Single-Phase 220	50	0.27	110	205	1200	1.5
					60	0.23		170	1450	
				Single-Phase 230	50	0.27	120	205	1200	
					60	0.23		170	1450	
TP **4IK25GN-SW2** (**4IK25A-SW2**)	TP **4IK25GN-SW2T** (**4IK25A-SW2T**)	–	25	Three-Phase 200	50	0.23	240	190	1300	–
					60	0.21	160	160	1550	
				Three-Phase 220	60	0.21	160	160	1600	
				Three-Phase 230	60	0.22	160	160	1600	
TP **4IK25GN-UW2*** (**4IK25A-UW2***)	–	TP **4IK25GN-UW2T2*** (**4IK25A-UW2T2***)	25	Three-Phase 380	50	0.113	270	205	1200	–
					60	0.102	220	170	1450	
				Three-Phase 400	50	0.116	270	205	1200	
					60	0.103	220	170	1450	
				Three-Phase 415	50	0.118	270	205	1200	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

- A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	**4IK25GN-CW2E** **4IK25GN-SW2** **4IK25GN-UW2**	**4IK25A-CW2E** **4IK25A-SW2** **4IK25A-UW2**	IP20
Terminal Box	**4IK25GN-CW2TE** **4IK25GN-SW2T** **4IK25GN-UW2T2**	**4IK25A-CW2TE*** **4IK25A-SW2T*** **4IK25A-UW2T2***	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	**4IK25GN-CW2E**	**4IK25A-CW2E**
	4IK25GN-SW2	**4IK25A-SW2**
	4IK25GN-UW2	**4IK25A-UW2**
Terminal Box	**4IK25GN-CW2TE**	**4IK25A-CW2TE**
	4IK25GN-SW2T	**4IK25A-SW2T**
	4IK25GN-UW2T2	**4IK25A-UW2T2**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise **GN-S** Gearhead	**4GN□S**	**3~180**
		4GN10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	**4GN□RH**	**3~180**
	Solid Shaft Gearhead	**4GN□RA**	**3~180**

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
- Parallel Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Page
Features C-20 / System Configuration C-23 / Product Line C-36 / Specifications C-36
Dimensions C-37 / Connection Diagrams C-29

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 8 N·m. When a gearhead of 1/25 to 1/36 is attached, the value for permissible torque is 6 N·m.

◇50 Hz

Unit = N·m

Product Name / Motor/Gearhead	Speed r/min / Gear Ratio	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
		3	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-CW2☐E 4IK25GN-UW2☐	**4GN☐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
4IK25GN-SW2☐	**4GN☐S**	0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	6.3	7.5	8	8	8	8	8	8

◇60 Hz

Unit = N·m

Product Name / Motor/Gearhead	Speed r/min / Gear Ratio	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
		3	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-CW2☐E 4IK25GN-UW2☐	**4GN☐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
4IK25GN-SW2☐	**4GN☐S**	0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16, Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

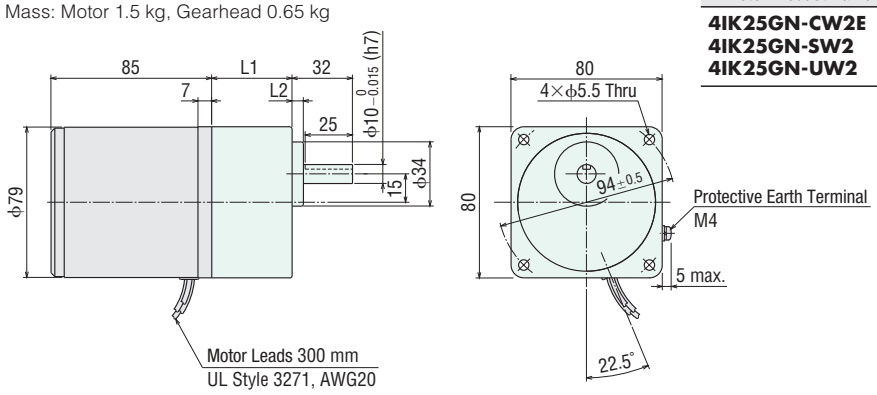
→ Page C-17

Dimensions (Unit = mm)

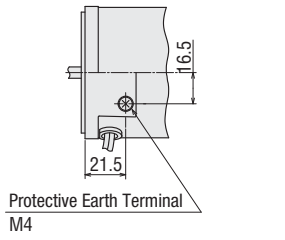
- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box ☐ is located within the product name.

◇Lead Wire Type ①

Mass: Motor 1.5 kg, Gearhead 0.65 kg



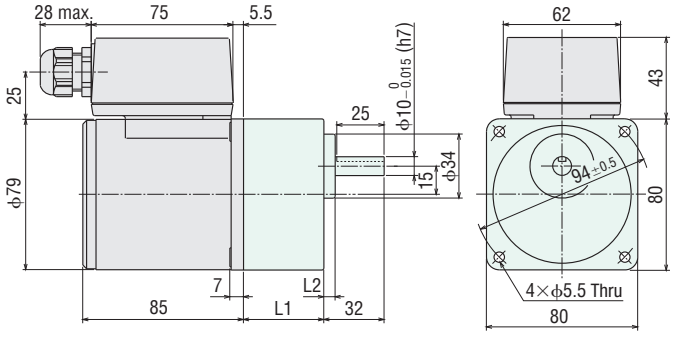
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
4IK25GN-CW2E 4IK25GN-SW2 4IK25GN-UW2	**4GN☐S**	**3~18**	32	6
		25~180	42.5	



Detail Drawing of Protective Earth Terminal

◇Terminal Box Type ②

Mass: Motor 1.7 kg, Gearhead 0.65 kg

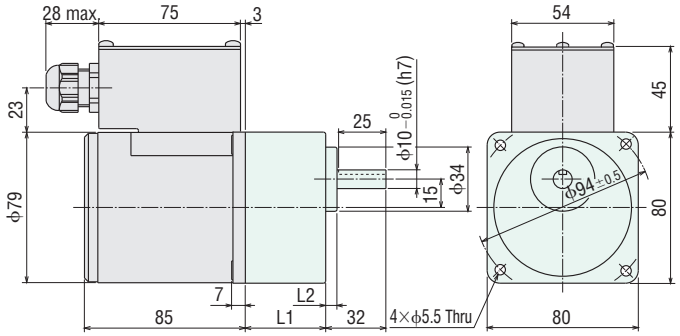


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
4IK25GN-CW2TE 4IK25GN-SW2T	**4GN☐S**	**3~18**	32	6
		25~180	42.5	

- Applicable cable diameter is Φ6~Φ12.
- Details of terminal box → Page C-255

◇Terminal Box Type ③

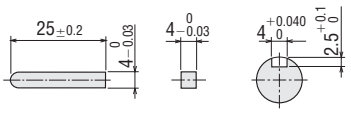
Mass: Motor 1.7 kg
Gearhead 0.65 kg



Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
4IK25GN-UW2T2	**4GN□S**	**3~18**	32	6
		25~180	42.5	

◇Key and Key Slot

(The key is included with the gearhead.)

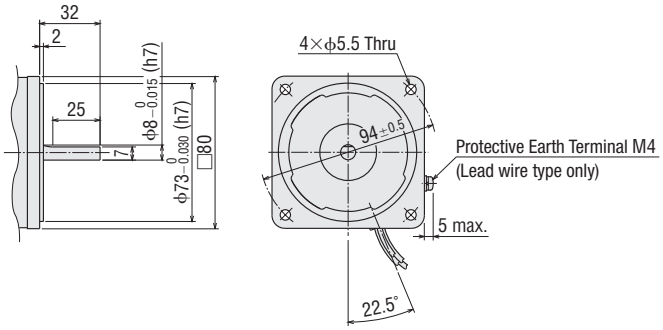


- Applicable cable diameter is ϕ6~ϕ12.
- Cable glands can be installed in three directions.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 1.5 kg (Lead wire type)
1.7 kg (Terminal box type)

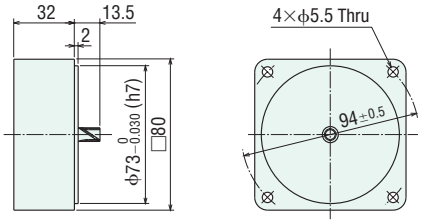


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

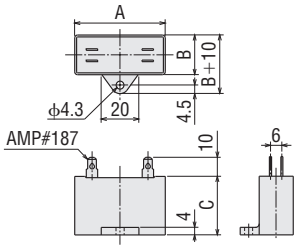
4GN10XS

Mass: 0.4 kg



◇Capacitor

(Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
4IK25GN-CW2E (**4IK25A-CW2E**)	**4IK25GN-CW2TE** (**4IK25A-CW2TE**)	CH15BFAUL	38	21	31	37	Included

Connection Diagrams

➜ Page C-29

Induction Motors

40 W

□90 mm


Lead Wire Type


Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name ( ): Round Shaft Type			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **5IK40GN-CW2E** (**5IK40A-CW2E**)	TP **5IK40GN-CW2TE** (**5IK40A-CW2TE**)	–	40	Single-Phase 220	50	0.39	200	315	1250	2.3
					60	0.35		260	1500	
				Single-Phase 230	50	0.39		300	1300	
					60	0.34		260	1500	
TP **5IK40GN-SW2** (**5IK40A-SW2**)	TP **5IK40GN-SW2T** (**5IK40A-SW2T**)	–	40	Three-Phase 200	50	0.32	400	300	1300	–
					60	0.30	260	260	1550	
				Three-Phase 220	60	0.30	260	260	1600	
				Three-Phase 230	60	0.31	260	260	1600	
TP **5IK40GN-UW2*** (**5IK40A-UW2***)	–	TP **5IK40GN-UW2T2*** (**5IK40A-UW2T2***)	40	Three-Phase 380	50	0.172	400	300	1300	–
					60	0.154	340	260	1550	
				Three-Phase 400	50	0.178	400	300	1300	
					60	0.156	340	260	1550	
				Three-Phase 415	50	0.183	400	300	1300	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

- A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	**5IK40GN-CW2E** **5IK40GN-SW2** **5IK40GN-UW2**	**5IK40A-CW2E** **5IK40A-SW2** **5IK40A-UW2**	IP20
Terminal Box	**5IK40GN-CW2TE** **5IK40GN-SW2T** **5IK40GN-UW2T2**	**5IK40A-CW2TE*** **5IK40A-SW2T*** **5IK40A-UW2T2***	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	**5IK40GN-CW2E**	**5IK40A-CW2E**
	5IK40GN-SW2	**5IK40A-SW2**
	5IK40GN-UW2	**5IK40A-UW2**
Terminal Box	**5IK40GN-CW2TE**	**5IK40A-CW2TE**
	5IK40GN-SW2T	**5IK40A-SW2T**
	5IK40GN-UW2T2	**5IK40A-UW2T2**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise **GN-S** Gearhead	**5GN□S**	**3**~**180**
		5GN10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	**5GN□RH**	**3**~**180**
	Solid Shaft Gearhead	**5GN□RA**	**3**~**180**

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
- Parallel Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws),Gasket, Operating Manual
- Solid Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque, 10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ☐ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torque is 10 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
Motor/Gearhead	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**
5IK40GN-CW2☐E (220 VAC)	**5GN☐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
5IK40GN-CW2☐E (230 VAC) **5IK40GN-SW2☐** **5IK40GN-UW2☐**	**5GN☐S**	0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10

◇60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/Gearhead	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**
5IK40GN-CW2☐E **5IK40GN-SW2☐** **5IK40GN-UW2☐**	**5GN☐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

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

➜ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16, Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

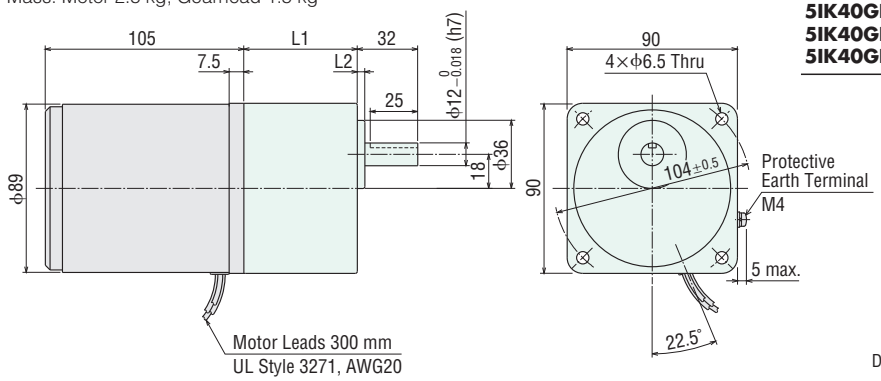
➜ Page C-17

Dimensions (Unit = mm)

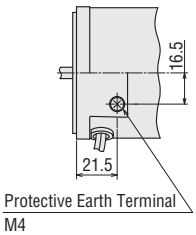
- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box ☐ is located within the product name.

◇Lead Wire Type ①

Mass: Motor 2.5 kg, Gearhead 1.5 kg



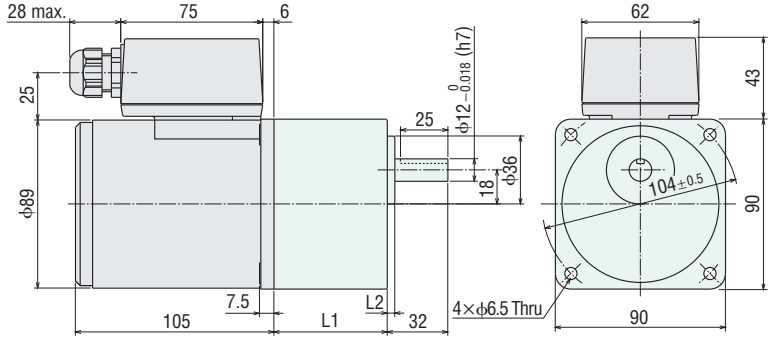
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-CW2E **5IK40GN-SW2** **5IK40GN-UW2**	**5GN☐S**	**3～18**	42	4
		25～180	60	



Detail Drawing of Protective Earth Terminal

◇Terminal Box Type ②

Mass: Motor 2.6 kg, Gearhead 1.5 kg

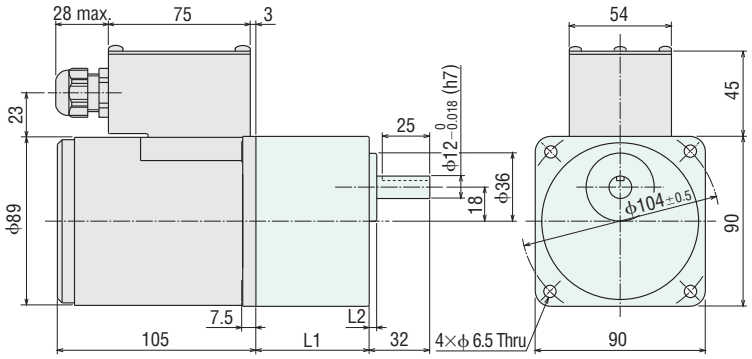


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-CW2TE **5IK40GN-SW2T**	**5GN☐S**	**3～18**	42	4
		25～180	60	

- Applicable cable diameter is φ6～φ12.
- Details of terminal box ➜ Page C-255

◇Terminal Box Type ③

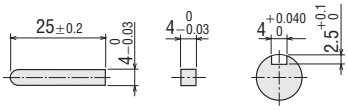
Mass: Motor 2.6 kg
Gearhead 1.5 kg



Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-UW2T2	**5GN□S**	**3~18**	42	4
		25~180	60	

◇Key and Key Slot

(The key is included with the gearhead.)

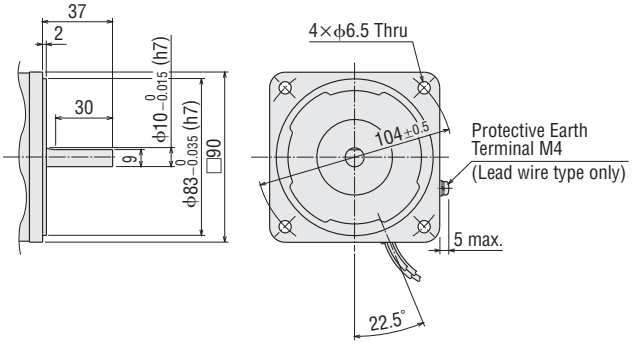


- Applicable cable diameter is ϕ6~ϕ12.
- Cable glands can be installed in three directions.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 2.5 kg (Lead wire type)
2.6 kg (Terminal box type)

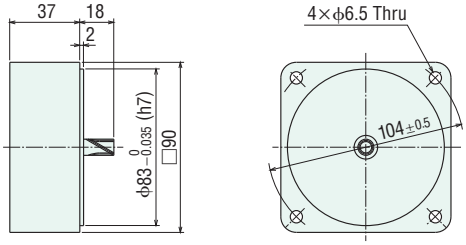


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

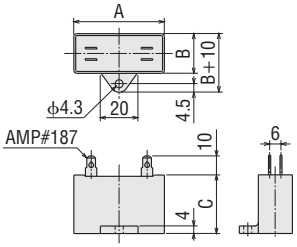
5GN10XS

Mass: 0.6 kg



◇Capacitor

(Included with single-phase motors)



◇Capacitor Dimensions (mm)

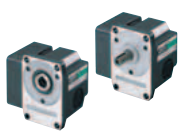
Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
5IK40GN-CW2E **(5IK40A-CW2E)**	**5IK40GN-CW2TE** **(5IK40A-CW2TE)**	CH23BFAUL	48	21	31	43	Included

■Connection Diagrams

➜ Page C-29

Gearhead, Peripheral Equipment

Space Saving
Right-Angle Gearheads
➜ Page C-213



Instantaneous Stop
Brake Pack
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Speed Control
Inverters
➜ Page D-136

Accessories
Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

Induction Motors

60 W

□90 mm


Lead Wire Type


Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name ( ): Round Shaft Type Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
			W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP 5IK60GE-CW2E (5IK60A-CW2E)	TP 5IK60GE-CW2TE (5IK60A-CW2TE)	–	60	Single-Phase 220	50	0.55	320	490	1200	4.0
					60	0.54		405	1450	
				Single-Phase 230	50	0.57		490	1200	
					60	0.54		405	1450	
TP 5IK60GE-SW2 (5IK60A-SW2)	TP 5IK60GE-SW2T (5IK60A-SW2T)	–	60	Three-Phase 200	50	0.50	600	450	1300	–
					60	0.43	500	380	1550	
				Three-Phase 220	60	0.45	500	380	1600	
				Three-Phase 230	60	0.46	500	380	1600	
TP 5IK60GE-UW2* (5IK60A-UW2*)	–	TP 5IK60GE-UW2T2* (5IK60A-UW2T2*)	60	Three-Phase 380	50	0.28	600	450	1300	–
					60	0.24	500	380	1550	
				Three-Phase 400	50	0.30	600	450	1300	
					60	0.24	500	380	1550	
				Three-Phase 415	50	0.32	600	450	1300	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

- A three-phase 400 VAC specification motors cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	5IK60GE-CW2E 5IK60GE-SW2 5IK60GE-UW2	5IK60A-CW2E 5IK60A-SW2 5IK60A-UW2	IP20
Terminal Box	5IK60GE-CW2TE 5IK60GE-SW2T 5IK60GE-UW2T2	5IK60A-CW2TE* 5IK60A-SW2T* 5IK60A-UW2T2*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5IK60GE-CW2E	5IK60A-CW2E
	5IK60GE-SW2	5IK60A-SW2
	5IK60GE-UW2	5IK60A-UW2
Terminal Box	5IK60GE-CW2TE	5IK60A-CW2TE
	5IK60GE-SW2T	5IK60A-SW2T
	5IK60GE-UW2T2	5IK60A-UW2T2

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life GE-S Gearhead	5GE□S	3~180
		5GE10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	5GE□RH	3~180
	Solid Shaft Gearhead	5GE□RA	3~180

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
- Parallel Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Page
Features C-20 / System Configuration C-23 / Product Line C-42 / Specifications C-42
Dimensions C-43 / Connection Diagrams C-29

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
Motor/Gearhead	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**
5IK60GE-CW2☐E	**5GE☐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
5IK60GE-SW2☐ **5IK60GE-UW2☐**	**5GE☐S**	1.1	1.3	1.8	2.2	2.7	3.3	4.1	4.9	5.9	7.4	8.9	10.7	14.9	17.8	19.9	20	20	20	20	20

◇60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/Gearhead	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**
5IK60GE-CW2☐E	**5GE☐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
5IK60GE-SW2☐ **5IK60GE-UW2☐**	**5GE☐S**	0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5.0	6.3	7.5	9.0	12.5	15.0	16.8	20	20	20	20	20

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

➜ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16, Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

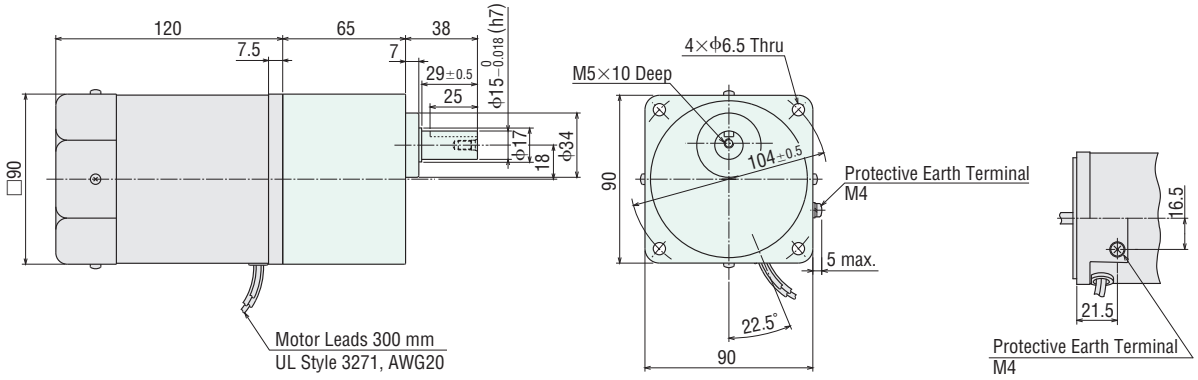
➜ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254

◇Lead Wire Type ①

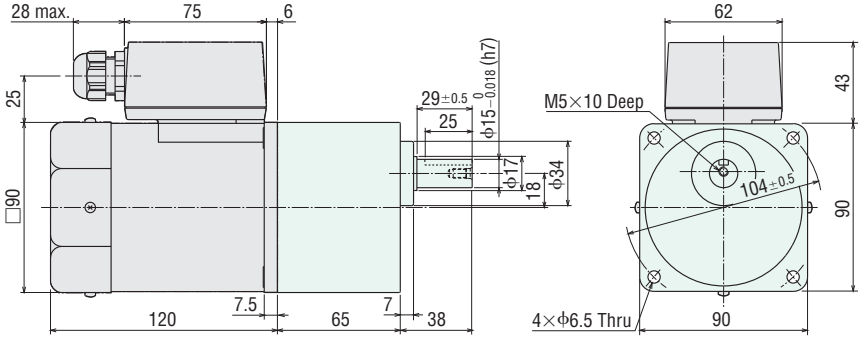
Mass: Motor 2.7 kg, Gearhead 1.5 kg



Detail Drawing of Protective Earth Terminal

◇Terminal Box Type ②

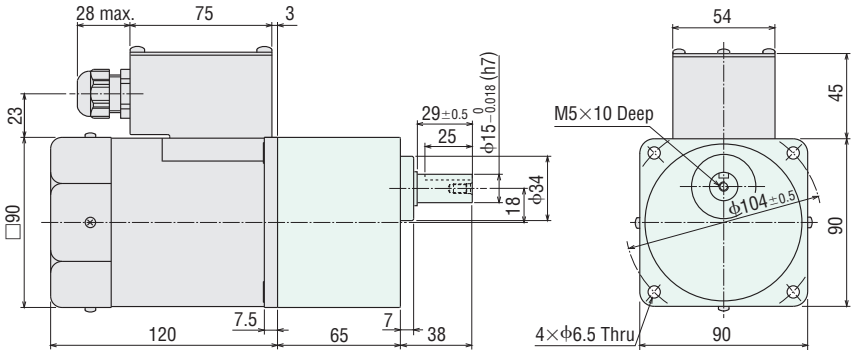
Mass: Motor 2.8 kg, Gearhead 1.5 kg



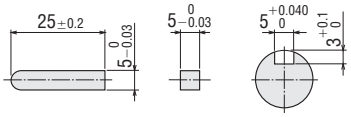
- Applicable cable diameter is φ6~φ12.
- Details of terminal box ➜ Page C-255

◇Terminal Box Type ③

Mass: Motor 2.8 kg
Gearhead 1.5 kg



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

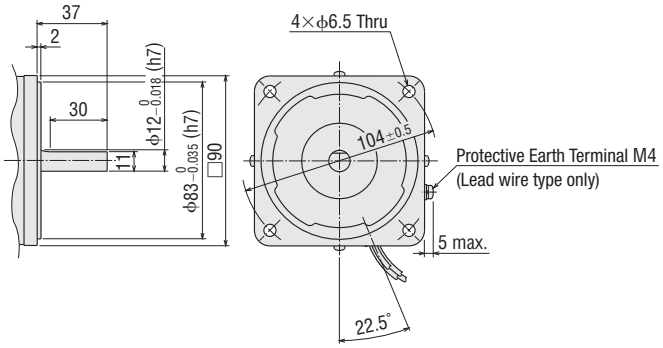


- Applicable cable diameter is φ6～φ12.
- Cable glands can be installed in three directions.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 2.7 kg (Lead wire type)
2.8 kg (Terminal box type)

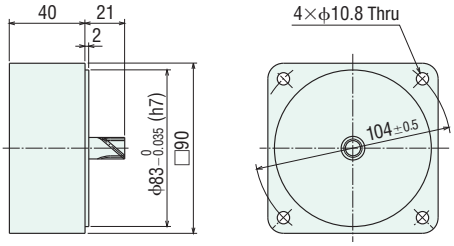


◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

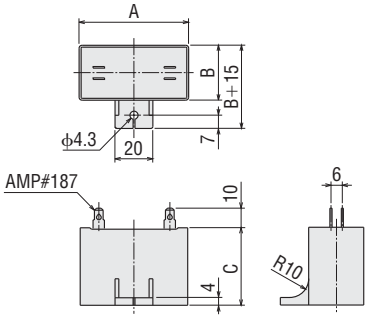
5GE10XS

Mass: 0.6 kg



◇Capacitor

(Included with single-phase motors)



◇Capacitor Dimensions (mm)

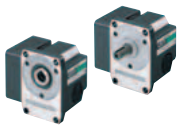
Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
5IK60GE-CW2E (**5IK60A-CW2E**)	**5IK60GE-CW2TE** (**5IK60A-CW2TE**)	CH40BFAUL	58	23.5	37	73	Included

Connection Diagrams

➜ Page C-29

Gearheads, Peripheral Equipment

Space Saving
Right-Angle Gearheads
➜ Page C-213



Instantaneous Stop
Brake Pack
➜ Page C-229

Speed Control
Inverters
➜ Page D-136

Accessories
Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

Induction Motors

90 W
□90 mm


Lead Wire Type


Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating RoHS

cULus CCC CE

Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name ( ): Round Shaft Type			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **5IK90GE-CW2E** (**5IK90A-CW2E**)	TP **5IK90GE-CW2TE** (**5IK90A-CW2TE**)	–	90	Single-Phase 220	50	0.74	450	730	1200	6.0
					60	0.82		605	1450	
				Single-Phase 230	50	0.76		730	1200	
					60	0.81		605	1450	
TP **5IK90GE-SW2** (**5IK90A-SW2**)	TP **5IK90GE-SW2T** (**5IK90A-SW2T**)	–	90	Three-Phase 200	50	0.64	850	680	1300	–
					60	0.59	700	570	1550	
				Three-Phase 220	60	0.60	700	570	1600	
				Three-Phase 230	60	0.61	700	570	1600	
TP **5IK90GE-UW2*** (**5IK90A-UW2***)	–	TP **5IK90GE-UW2T2*** (**5IK90A-UW2T2***)	90	Three-Phase 380	50	0.39	850	680	1300	–
					60	0.33	700	570	1550	
				Three-Phase 400	50	0.41	850	680	1300	
					60	0.34	700	570	1550	
				Three-Phase 415	50	0.44	850	680	1300	

- The product name listed on the motor nameplate does not include the code (**E**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards ➜ Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

- A three-phase 400 VAC specification motors cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	**5IK90GE-CW2E** **5IK90GE-SW2** **5IK90GE-UW2**	**5IK90A-CW2E** **5IK90A-SW2** **5IK90A-UW2**	IP20
Terminal Box	**5IK90GE-CW2TE** **5IK90GE-SW2T** **5IK90GE-UW2T2**	**5IK90A-CW2TE*** **5IK90A-SW2T*** **5IK90A-UW2T2***	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors RoHS

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	**5IK90GE-CW2E**	**5IK90A-CW2E**
	5IK90GE-SW2	**5IK90A-SW2**
	5IK90GE-UW2	**5IK90A-UW2**
Terminal Box	**5IK90GE-CW2TE**	**5IK90A-CW2TE**
	5IK90GE-SW2T	**5IK90A-SW2T**
	5IK90GE-UW2T2	**5IK90A-UW2T2**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) RoHS

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life **GE-S** Gearhead	**5GE□S**	**3**~**180**
		5GE10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	**5GE□RH**	**3**~**180**
	Solid Shaft Gearhead	**5GE□RA**	**3**~**180**

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
- Parallel Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead
  Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise **V** Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on **V** Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box ☐ is located within the motor product name.
  A number indicating the gear ratio is entered where the box ☐ is located within the gearhead product name.
- A colored background ☐ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
Motor/Gearhead	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**
5IK90GE-CW2□E	**5GE□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
5IK90GE-SW2□ **5IK90GE-UW2□**	**5GE□S**	1.7	2.0	2.8	3.3	4.1	5.0	6.2	7.4	8.9	11.2	13.5	16.2	20	20	20	20	20	20	20	20

◇60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/Gearhead	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**
5IK90GE-CW2□E	**5GE□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
5IK90GE-SW2□ **5IK90GE-UW2□**	**5GE□S**	1.4	1.7	2.3	2.8	3.5	4.2	5.2	6.2	7.5	9.4	11.3	13.5	18.8	20	20	20	20	20	20	20

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

➜ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16, Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

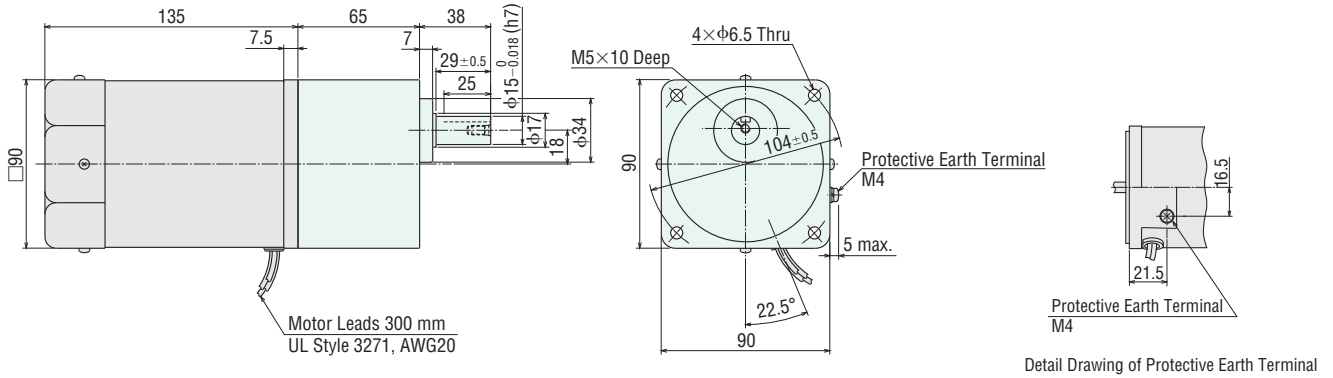
➜ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254

◇Lead Wire Type ①

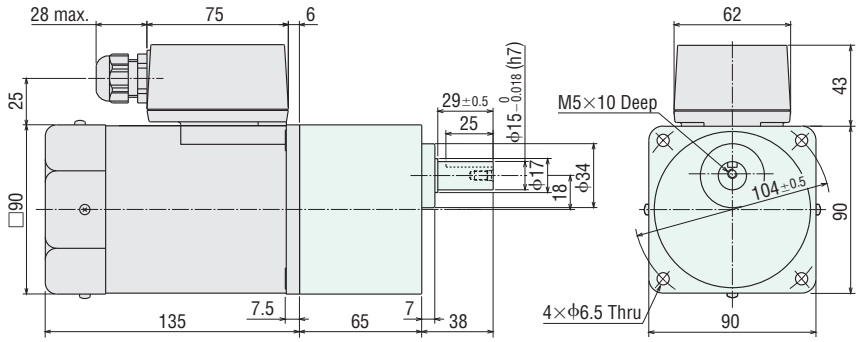
Mass: Motor 3.2 kg, Gearhead 1.5 kg



Detail Drawing of Protective Earth Terminal

◇Terminal Box Type ②

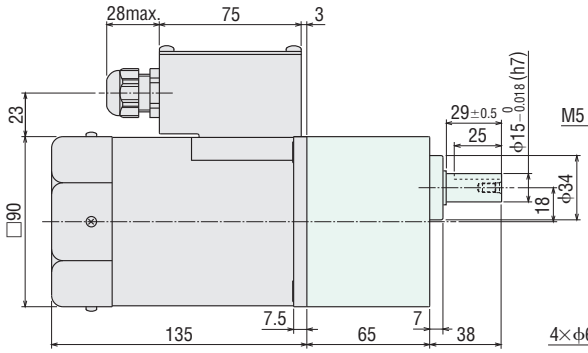
Mass: Motor 3.3 kg, Gearhead 1.5 kg



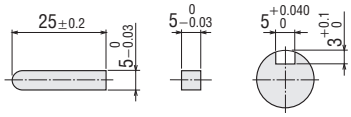
- Applicable cable diameter is ϕ6~ϕ12.
- Details of terminal box ➜ Page C-255

◇Terminal Box Type ③

Mass: Motor 3.3 kg
Gearhead 1.5 kg



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

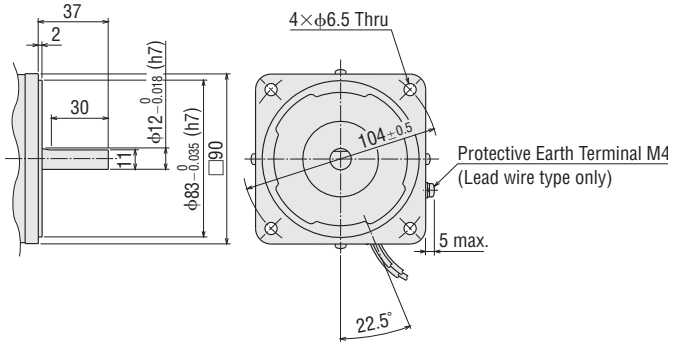


- Applicable cable diameter is φ6～φ12.
- Cable glands can be installed in three directions.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 3.2 kg (Lead wire type)
3.3 kg (Terminal box type)

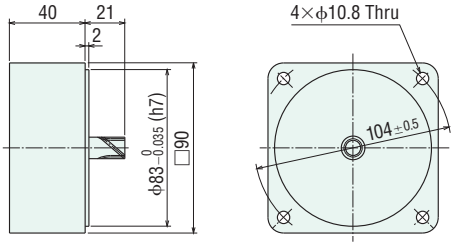


◇Decimal Gearhead

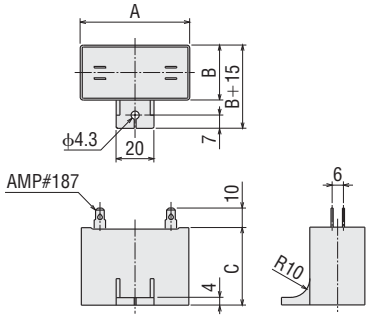
This can be attached to the **GE** pinion shaft type.

5GE10XS

Mass: 0.6 kg



◇Capacitor
(Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name Upper Product Name: Pinion Shaft Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Lead Wire Type	Terminal Box Type						
5IK90GE-CW2E (**5IK90A-CW2E**)	**5IK90GE-CW2TE** (**5IK90A-CW2TE**)	CH60BFAUL	58	29	41	92	Included

■Connection Diagrams

➜ Page C-29

Gearheads, Peripheral Equipment

Space Saving
Right-Angle Gearheads
➜ Page C-213

Instantaneous Stop
Brake Pack
➜ Page C-229

Speed Control
Inverters
➜ Page D-136

Accessories
Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

World K Series IP65 Terminal Box Type Induction Motors

6 W, 15 W, 25 W, 40 W

□60 mm, □70 mm, □80 mm, □90 mm

Features

●IP65 Specification Suitable for Use in Factory Environment

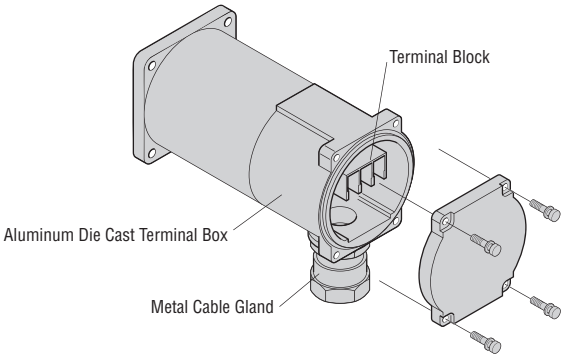
The world **K** series IP65 terminal box type include parts with excellent environmental resistance to meet the needs of factory environments.

◇Protection Performance against Dust and Water Conforming to IP65 Rating for Degree of Protection

The degree of protection conforms to IP65 by using an O-ring in the motor and an oil seal construction in the gearhead. These motors are ideal for use in an environment requiring dust resistance and water resistance to protect against cutting powder suspended in air, splashed water droplets, etc.

◇Strong Metal Terminal Box

A sturdy aluminum die-cast terminal box is fitted with a metal cable gland.

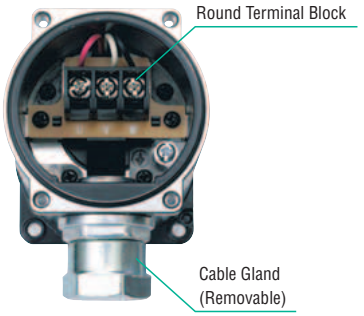


●Terminal Box with Easy-to-Use Structure

The terminal box provided at the back of the motor not only offers high environmental resistance, but it is also structured to ensure ease of use.

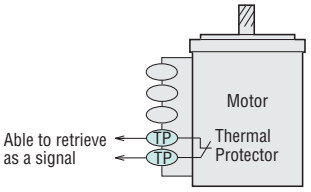
User-Friendly Design

- Wires can be connected using round crimp terminals.
- The direction in which the cables are taken out can be changed according to the combination of motor and gearhead.
- The cable gland can be removed to connect a conduit pipe, etc., instead.



●Lineup of Overheat Protection Devices (Thermal Protectors) for Signal

An overheat protection device (thermal protector) is built into 15 W to 40 W motors. A signal type that can use a conventional automatic return type thermal protector to retrieve the operation of the overheat protection device as a signal and control the operation and stopping of the motor is available. *Oriental Motor has a thermal protector for automatic return type and signal type to meet your various needs.



✻Connect the motor properly so that the power of the motor can be interrupted when the thermal protector is activated. Connection example ➜ Page C-59

●Combination Type with Assembled Motor and Gearhead

Combination type products are delivered with the motor and gearhead pre-assembled. This can reduce the number of assembly man-hours and alleviate any worries about damaging the motor shaft during assembly. The combination type uses a **GN-S** gearhead.

◇Long Life, Low Noise **GN-S** Gearhead is Available

Adopting innovative technologies and structure, the “long life, low noise **GN-S** gearhead” achieves a long rated life of 10000 hours*, twice as long as the level of a conventional gearhead. Also, the gearhead is designed for low noise.

✻For the rated life time definition, refer to “Life of Gearheads” on page G-35.

● Can be combined with a right-angle gearhead. For details, please contact the nearest Oriental Motor sales office.

Note

● It does not conform to the IP65 rating when used with a decimal gearhead.

Product Line

Combination Type	This type comes with the motor and its dedicated gearhead pre-assembled. This simplifies installing in equipment. Motors and gearheads are also available separately to facilitate changes in motor and gearhead combinations and if spare gearheads are required.

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

Combination Type

◇Thermal Protector for Automatic Return Type RoHS

Output Power	Power Supply Voltage	Product Name	Gear Ratio
6 W*	Single-Phase 100 VAC	**2IK6AB-□S**	**3~180**
	Single-Phase 110/115 VAC	**2IK6FB-□S**	
	Single-Phase 200 VAC	**2IK6CB-□S**	
	Single-Phase 220/230 VAC	**2IK6EB-□S**	
	Three-Phase 200/220/230 VAC	**2IK6SB-□S**	
15 W	Single-Phase 100 VAC	**3IK15AB-□S**	**3~180**
	Single-Phase 110/115 VAC	**3IK15FB-□S**	
	Single-Phase 200 VAC	**3IK15CB-□S**	
	Single-Phase 220/230 VAC	**3IK15EB-□S**	
	Three-Phase 200/220/230 VAC	**3IK15SB-□S**	

*6 W models are impedance protected. A thermal protector is not built in.

Output Power	Power Supply Voltage	Product Name	Gear Ratio
25 W	Single-Phase 100 VAC	**4IK25AB-□S**	**3~180**
	Single-Phase 110/115 VAC	**4IK25FB-□S**	
	Single-Phase 200 VAC	**4IK25CB-□S**	
	Single-Phase 220/230 VAC	**4IK25EB-□S**	
	Three-Phase 200/220/230 VAC	**4IK25SB-□S**	
40 W	Single-Phase 100 VAC	**5IK40AB-□S**	**3~180**
	Single-Phase 110/115 VAC	**5IK40FB-□S**	
	Single-Phase 200 VAC	**5IK40CB-□S**	
	Single-Phase 220/230 VAC	**5IK40EB-□S**	
	Three-Phase 200/220/230 VAC	**5IK40SB-□S**	

◇Thermal Protector for Signal Type RoHS

Output Power	Power Supply Voltage	Product Name	Gear Ratio
15 W	Single-Phase 100 VAC	**3IK15AB-□SS**	**3~180**
	Single-Phase 110/115 VAC	**3IK15FB-□SS**	
	Single-Phase 200 VAC	**3IK15CB-□SS**	
	Single-Phase 220/230 VAC	**3IK15EB-□SS**	
	Three-Phase 200/220/230 VAC	**3IK15SB-□SS**	
25 W	Single-Phase 100 VAC	**4IK25AB-□SS**	**3~180**
	Single-Phase 110/115 VAC	**4IK25FB-□SS**	
	Single-Phase 200 VAC	**4IK25CB-□SS**	
	Single-Phase 220/230 VAC	**4IK25EB-□SS**	
	Three-Phase 200/220/230 VAC	**4IK25SB-□SS**	

Output Power	Power Supply Voltage	Product Name	Gear Ratio
40 W	Single-Phase 100 VAC	**5IK40AB-□SS**	**3~180**
	Single-Phase 110/115 VAC	**5IK40FB-□SS**	
	Single-Phase 200 VAC	**5IK40CB-□SS**	
	Single-Phase 220/230 VAC	**5IK40EB-□SS**	
	Three-Phase 200/220/230 VAC	**5IK40SB-□SS**	

The following items are included in each product.
Motor, Gearhead, Capacitor*1, Capacitor Cap*1, Mounting Screws, Parallel Key*2, Operating Manual
*1 Single-phase motors only
*2 Only for products with a key slot on the output shaft

Round Shaft Type

◇Thermal Protector for Automatic Return Type RoHS

Output Power	Power Supply Voltage	Product Name
6 W*	Single-Phase 100 VAC	**2IK6A-AW2BJ**
	Single-Phase 110/115 VAC	**2IK6A-AW2BU**
	Single-Phase 200 VAC	**2IK6A-CW2BJ**
	Single-Phase 220/230 VAC	**2IK6A-CW2BE**
	Three-Phase 200/220/230 VAC	**2IK6A-SW2B**
15 W	Single-Phase 100 VAC	**3IK15A-AW2BJ**
	Single-Phase 110/115 VAC	**3IK15A-AW2BU**
	Single-Phase 200 VAC	**3IK15A-CW2BJ**
	Single-Phase 220/230 VAC	**3IK15A-CW2BE**
	Three-Phase 200/220/230 VAC	**3IK15A-SW2B**
25 W	Single-Phase 100 VAC	**4IK25A-AW2BJ**
	Single-Phase 110/115 VAC	**4IK25A-AW2BU**
	Single-Phase 200 VAC	**4IK25A-CW2BJ**
	Single-Phase 220/230 VAC	**4IK25A-CW2BE**
	Three-Phase 200/220/230 VAC	**4IK25A-SW2B**
40 W	Single-Phase 100 VAC	**5IK40A-AW2BJ**
	Single-Phase 110/115 VAC	**5IK40A-AW2BU**
	Single-Phase 200 VAC	**5IK40A-CW2BJ**
	Single-Phase 220/230 VAC	**5IK40A-CW2BE**
	Three-Phase 200/220/230 VAC	**5IK40A-SW2B**

*6 W models are impedance protected. A thermal protector is not built in.

◇Thermal Protector for Signal Type RoHS

Output Power	Power Supply Voltage	Product Name
15 W	Single-Phase 100 VAC	**3IK15A-AW2BSJ**
	Single-Phase 110/115 VAC	**3IK15A-AW2BSU**
	Single-Phase 200 VAC	**3IK15A-CW2BSJ**
	Single-Phase 220/230 VAC	**3IK15A-CW2BSE**
	Three-Phase 200/220/230 VAC	**3IK15A-SW2BS**
25 W	Single-Phase 100 VAC	**4IK25A-AW2BSJ**
	Single-Phase 110/115 VAC	**4IK25A-AW2BSU**
	Single-Phase 200 VAC	**4IK25A-CW2BSJ**
	Single-Phase 220/230 VAC	**4IK25A-CW2BSE**
	Three-Phase 200/220/230 VAC	**4IK25A-SW2BS**
40 W	Single-Phase 100 VAC	**5IK40A-AW2BSJ**
	Single-Phase 110/115 VAC	**5IK40A-AW2BSU**
	Single-Phase 200 VAC	**5IK40A-CW2BSJ**
	Single-Phase 220/230 VAC	**5IK40A-CW2BSE**
	Three-Phase 200/220/230 VAC	**5IK40A-SW2BS**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

● A number indicating the gear ratio is entered where the box □ is located within the product name.

IP65 Terminal Box Type Induction Motors

6 W

□60 mm

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Combination Type Lower Product Name in ( ): Round Shaft Type	Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
ZP **2IK6EB-□S** (**2IK6A-CW2BE**)	6	Single-Phase 220	50	0.103	38	49	1150	0.6
			60	0.091	40	41	1450	
		Single-Phase 230	50	0.107	45	49	1200	
			60	0.094	40	41	1450	
ZP **2IK6SB-□S** (**2IK6A-SW2B**)	6	Three-Phase 200	50	0.081	49	49	1200	–
			60	0.072	41	41	1400	
		Three-Phase 220	60	0.076	41	41	1500	
		Three-Phase 230	60	0.079	41	41	1500	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards ➜ Page H-2

ZP: These products are impedance protected.

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 3 N·m.

◇50Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	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**
2IK6EB-□S **2IK6SB-□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

◇60Hz

Unit = N·m

Product Name	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**
2IK6EB-□S **2IK6SB-□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

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

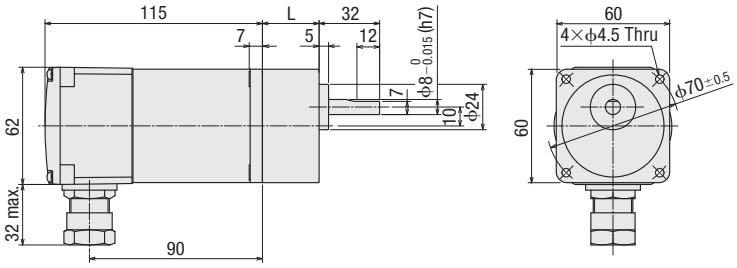
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

6 W

◇Combination Type

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
2IK6EB-□S	2IK6GN-CW2BE	2GN□S	**3~18**	30	1.3
2IK6SB-□S	2IK6GN-SW2B		**25~180**	40	

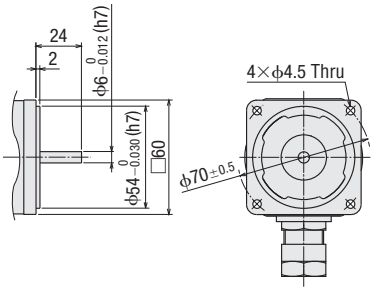


- Applicable cable diameter is ϕ8~ϕ12.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 0.9 kg

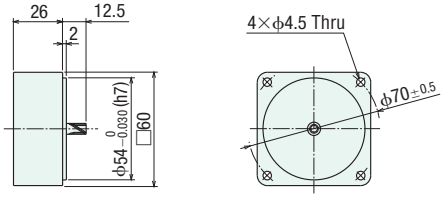


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

2GN10XS

Mass: 0.2 kg



IP65 Terminal Box Type Induction Motors

15 W

□70 mm

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Combination Type Lower Product Name in ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **3IK15EB-□S** (**3IK15A-CW2BE**)	TP **3IK15EB-□SS** (**3IK15A-CW2BSE**)	15	Single-Phase 220	50	0.19	70	125	1200	1.0
				60	0.16	65	105	1450	
			Single-Phase 230	50	0.19	75	125	1200	
				60	0.16	65	105	1450	
TP **3IK15SB-□S** (**3IK15A-SW2B**)	TP **3IK15SB-□SS** (**3IK15A-SW2BS**)	15	Three-Phase 200	50	0.17	110	110	1350	–
				60	0.14	85	100	1600	
			Three-Phase 220	60	0.15	100	100	1650	
			Three-Phase 230	60	0.16	100	100	1650	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards ➜ Page H-2

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

TP: This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example ➜ Page C-59

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
  S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 5 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	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**
3IK15EB-□S◇		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
3IK15SB-□S◇		0.27	0.32	0.45	0.53	0.67	0.80	1.1	1.3	1.6	2.0	2.4	2.9	3.6	4.4	5	5	5	5	5	5

◇60 Hz

Unit = N·m

Product Name	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**
3IK15EB-□S◇		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
3IK15SB-□S◇		0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

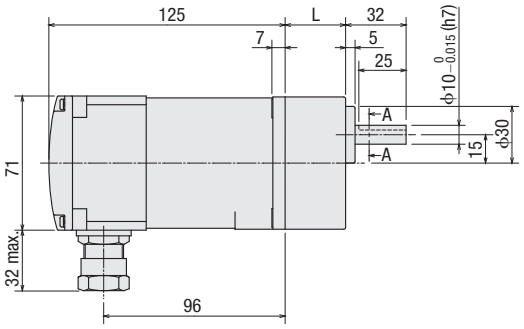
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

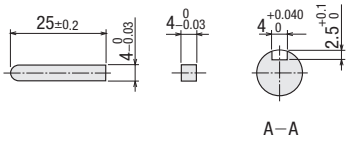
15 W

◇Combination Type (Thermal Protector for Automatic Return Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
3IK15EB-□S	3IK15GN-CW2BE	3GN□S	**3~18**	32	1.95
3IK15SB-□S	3IK15GN-SW2B		**25~180**	42	



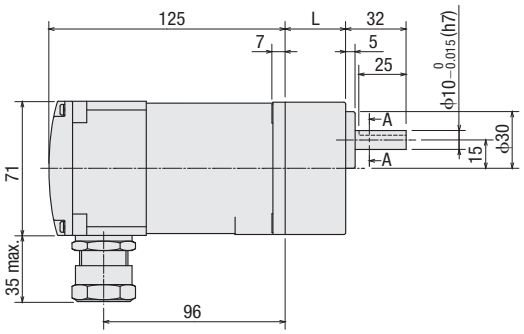
◇Key and Key Slot (Included)



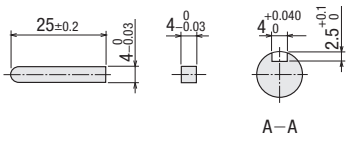
- Applicable cable diameter is Φ8~Φ12.
- Details of terminal box ➜ Page C-255

◇Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
3IK15EB-□SS	3IK15GN-CW2BSE	3GN□S	**3~18**	32	1.95
3IK15SB-□SS	3IK15GN-SW2BS		**25~180**	42	



◇Key and Key Slot (Included)

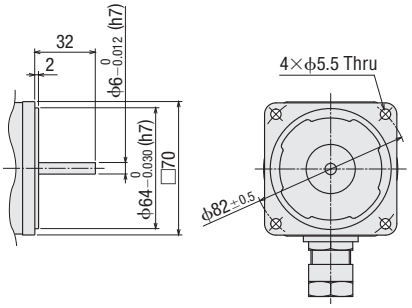


- Applicable cable diameter is Φ12~Φ16.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 1.4 kg

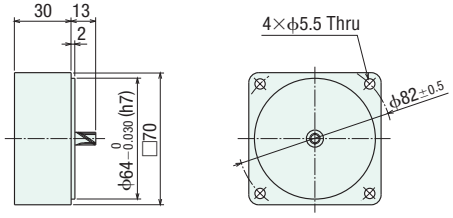


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

3GN10XS

Mass: 0.3 kg



IP65 Terminal Box Type Induction Motors

25 W

□80 mm

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Combination Type Lower Product Name in ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **4IK25EB-□S** (**4IK25A-CW2BE**)	TP **4IK25EB-□SS** (**4IK25A-CW2BSE**)	25	Single-Phase 220	50	0.27	110	205	1200	1.5
				60	0.23		170	1450	
			Single-Phase 230	50	0.27	120	205	1200	
				60	0.23		170	1450	
TP **4IK25SB-□S** (**4IK25A-SW2B**)	TP **4IK25SB-□SS** (**4IK25A-SW2BS**)	25	Three-Phase 200	50	0.23	240	190	1300	–
				60	0.21	160	160	1550	
			Three-Phase 220	60	0.21	160	160	1600	
			Three-Phase 230	60	0.22	160	160	1600	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards ➜ Page H-2

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

TP: This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example ➜ Page C-59

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
  S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torque is 8 N·m. When a gearhead of 1/25 to 1/36 is attached, the value for permissible torque is 6 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	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**
4IK25EB-□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
4IK25SB-□S◇		0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	6.3	7.5	8	8	8	8	8	8

◇60 Hz

Unit = N·m

Product Name	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**
4IK25EB-□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
4IK25SB-□S◇		0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8

Page
Features C-48 / System Configuration C-23 / Product Line C-49 / Specifications C-54
Dimensions C-55 / Connection Diagrams C-58 / Motor and Gearhead Combinations C-60

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

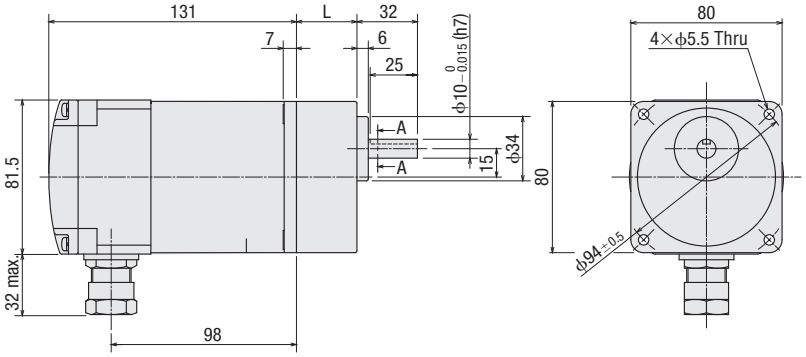
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

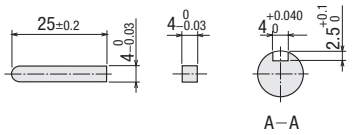
25 W

◇Combination Type (Thermal Protector for Automatic Return Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
4IK25EB-□S	4IK25GN-CW2BE	4GN□S	**3~18**	32	2.55
4IK25SB-□S	4IK25GN-SW2B		**25~180**	42.5	



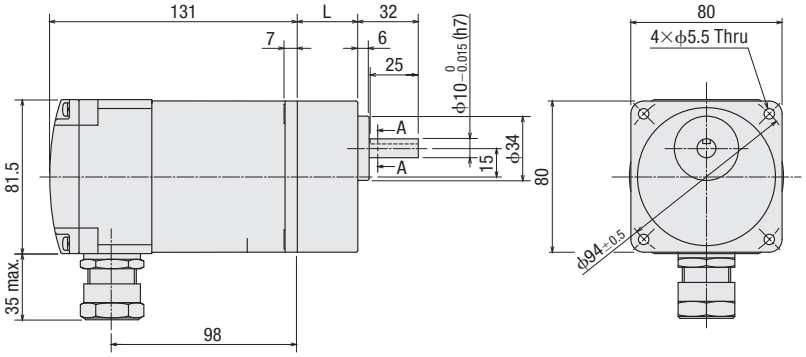
◇Key and Key Slot (Included)



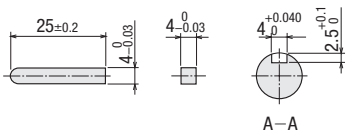
- Applicable cable diameter is Φ8~Φ12.
- Details of terminal box ➜ Page C-255

◇Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
4IK25EB-□SS	4IK25GN-CW2BSE	4GN□S	**3~18**	32	2.55
4IK25SB-□SS	4IK25GN-SW2BS		**25~180**	42.5	



◇Key and Key Slot (Included)

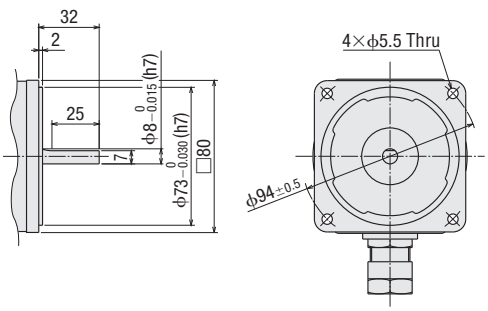


- Applicable cable diameter is Φ12~Φ16.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 1.9 kg

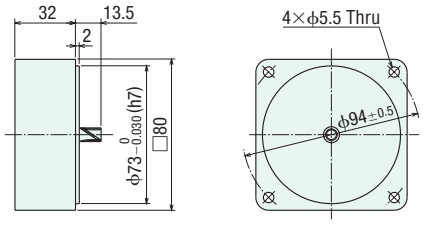


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

4GN10XS

Mass: 0.4 kg



IP65 Terminal Box Type Induction Motors

40 W

□90 mm

Specifications – Continuous Rating RoHS

Product Name and Type Upper Product Name: Combination Type Lower Product Name in ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
TP **5IK40EB-□S** **(5IK40A-CW2BE)**	TP **5IK40EB-□SS** **(5IK40A-CW2BSE)**	40	Single-Phase 220	50	0.39	200	315	1250	2.3
				60	0.35		260	1500	
			Single-Phase 230	50	0.39		300	1300	
				60	0.34		260	1500	
TP **5IK40SB-□S** **(5IK40A-SW2B)**	TP **5IK40SB-□SS** **(5IK40A-SW2BS)**	40	Three-Phase 200	50	0.32	400	300	1300	–
				60	0.30	260	260	1550	
			Three-Phase 220	60	0.30	260	260	1600	
			Three-Phase 230	60	0.31	260	260	1600	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards ➜ Page H-2

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

TP: This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example ➜ Page C-59

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
  S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 10 N·m.

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	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**
5IK40EB-□S◇ (Single-Phase 220 VAC)		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
5IK40EB-□S◇ (Single-Phase 230 VAC) **5IK40SB-□S◇**		0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10

◇60 Hz

Unit = N·m

Product Name	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**
5IK40EB-□S◇ **5IK40SB-□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

Motors (Round shaft type) ➜ Page C-16
Gearheads ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

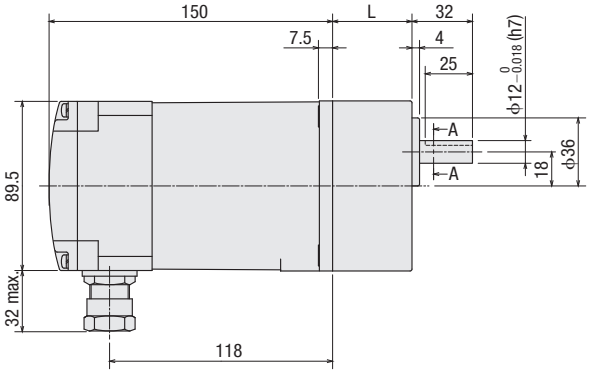
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

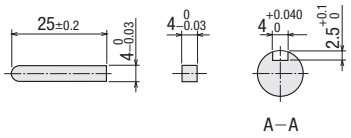
40 W

◇Combination Type (Thermal Protector for Automatic Return Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
5IK40EB-□S	5IK40GN-CW2BE	5GN□S	**3~18**	42	4.2
5IK40SB-□S	5IK40GN-SW2B		**25~180**	60	



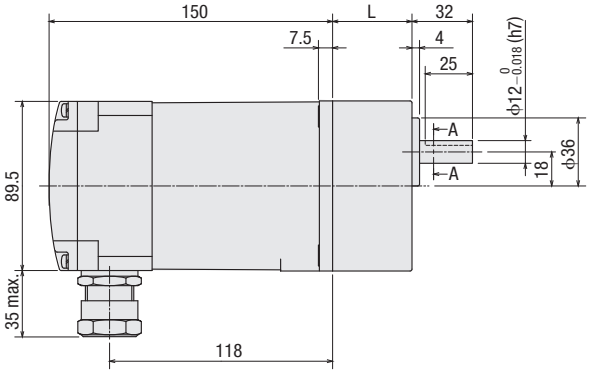
◇Key and Key Slot (Included)



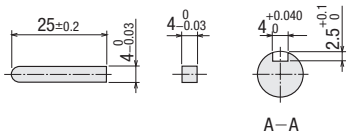
- Applicable cable diameter is φ8~φ12.
- Details of terminal box ➜ Page C-255

◇Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
5IK40EB-□SS	5IK40GN-CW2BSE	5GN□S	**3~18**	42	4.2
5IK40SB-□SS	5IK40GN-SW2BS		**25~180**	60	



◇Key and Key Slot (Included)

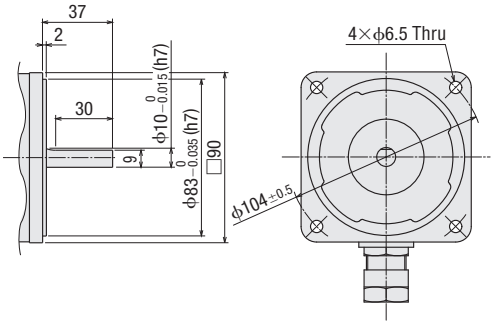


- Applicable cable diameter is φ12~φ16.
- Details of terminal box ➜ Page C-255

◇Shaft Section of Round Shaft Type

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

Mass: 2.7 kg

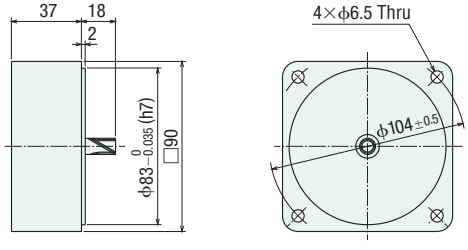


◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

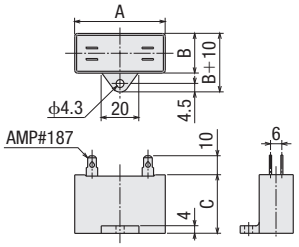
5GN10XS

Mass: 0.6 kg



Dimensions (Unit = mm)

Capacitor (Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name and Type Upper Product Name: Combination Type Lower Product Name in ( ): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type						
2IK6EB-□S **(2IK6A-CW2BE)**	–	CH06BFAUL	31	14.5	23.5	18	Included
3IK15EB-□S **(3IK15A-CW2BE)**	**3IK15EB-□SS** **(3IK15A-CW2BSE)**	CH10BFAUL	37	18	27	27	
4IK25EB-□S **(4IK25A-CW2BE)**	**4IK25EB-□SS** **(4IK25A-CW2BSE)**	CH15BFAUL	38	21	31	37	
5IK40EB-□S **(5IK40A-CW2BE)**	**5IK40EB-□SS** **(5IK40A-CW2BSE)**	CH23BFAUL	48	21	31	43	

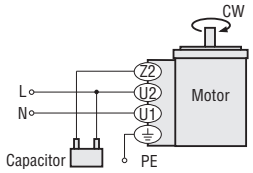
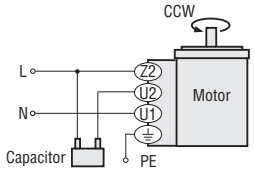
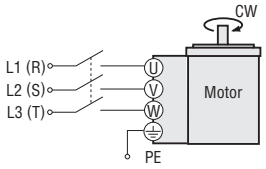
● A number indicating the gear ratio is entered where the box □ is located within the product name.

Connection Diagram

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

● The rotation direction of the gearhead output shaft may differ from that of the motor output shaft depending on the gear ratio of the gearhead.
Refer to the permissible torque table of the combination type for the rotation direction.

Thermal Protector for Automatic Return Type, Impedance Protected

Single-Phase Motor		Three-Phase Motor
Clockwise	**Counterclockwise**	**Clockwise**
		
		Counterclockwise To change the rotation direction to counterclockwise, change any two connections between R, S and T.

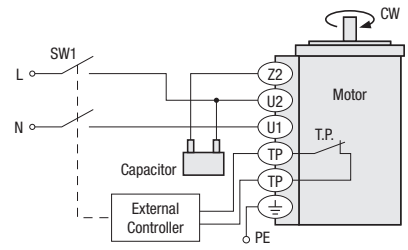
●Thermal Protector for Signal Type

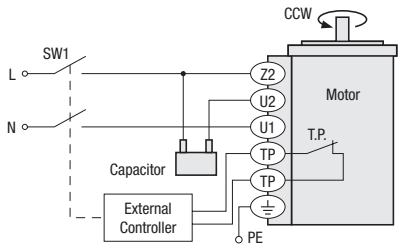
●If the motor with built-in thermal protector abnormally heats for some reason, the contacts (normally closed) become open. When the temperature of the motor decreases, the contacts of the thermal protector are reset (closed).

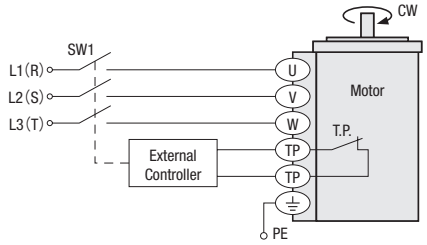
●Operate SW1 with the external controller and shut off the motor's power supply in order to stop the motor when the thermal protector has been activated.

●Even if the thermal protector automatically returns, ensure that the power supply remains shut off with SW1.

Single-Phase Motor		Three-Phase Motor
Clockwise	**Counterclockwise**	**Clockwise**







Counterclockwise
To change the rotation direction to counterclockwise, change any two connections between R, S and T.

◇Connection Example of Thermal Protector for Signal Type

When Relays and Switches are Used

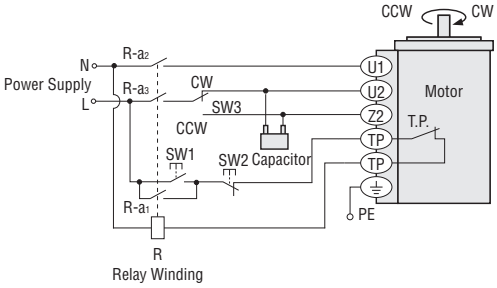
•Connect the motor properly so that the power of the motor can be interrupted when the thermal protector is activated.

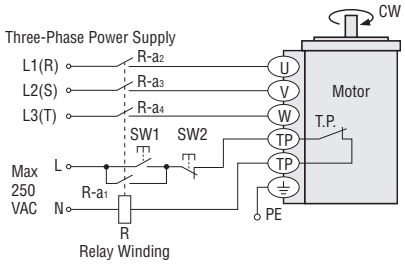
•When switch SW1 (normally open) is turned ON, the motor operates. When switch SW2 (normally closed) is turned ON, the motor stops.

Single-Phase Motor	Three-Phase Motor
Clockwise	**Clockwise**

Clockwise
To rotate the motor in the clockwise (CW) direction, turn the switch (SW3) to CW.

Counterclockwise
To rotate the motor in the counterclockwise (CCW) direction, turn the switch (SW3) to CCW.





Counterclockwise
To change the rotation direction to counterclockwise, change any two connections between R, S and T.

Note

●Configure the circuit properly so that the motor does not unexpectedly start even when the thermal protector is automatically reset.

●Do not connect the thermal protector directly to a power source. Always connect a switch or relay.

◇Contact Capacity

Number	Single-Phase 220/230 VAC	Remarks
SW1 SW2 SW3	250 VAC 5 A min. (Inductive load)	–
R-a1 R-a2 R-a3 R-a4	250 VAC 5 A min. (Inductive load)	Switched simultaneously

●Connect a CR circuit for surge suppression to the forward/reverse select switch to protect the contact. **EPCR1201-2** (sold separately) is available as an accessory. ➜ Page C-250

●How to connect a capacitor ➜ Page C-255

●Z2, U2, U1 U, V, W: Motor power line, TP: Thermal protector

◇Thermal Protector Specifications (Thermal Protector for Signal Type)

Item	Specifications
Operating Temperature	Open: 130±5°C, Close: 90±15°C (Normally Closed)
Contact Specifications	Rated operational voltage and rated operational current (resistance load) 250 VAC 2 A, 26 VDC 2 A Minimum Load Condition: 85 VAC 50 mA, 5 VDC 5 mA Initial Contact Resistance: 50 mΩ max.
Dielectric Strength	No abnormality is judged even with application of 3.0 kVAC at 50 Hz or 60 Hz between the motor windings and the thermal protector lead wire cores for 1 minute after rated operation under normal ambient temperature and humidity.

●Connecting Method

◇Applicable Cable Diameter

ϕ8～12 mm (Thermal Protector for Automatic Return Type, Impedance Protected)
ϕ12～16 mm (Thermal Protector for Signal Type)

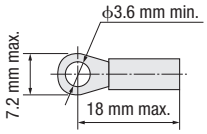
◇Applicable Lead Wire Diameter

AWG18 (0.75 mm^2) min.

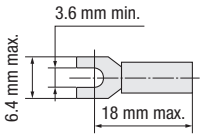
◇Applicable Crimp Terminal

Connection to Terminal Block

- Insulated Round Terminal

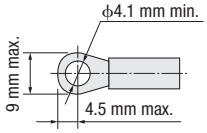


- Insulated Fork Terminal



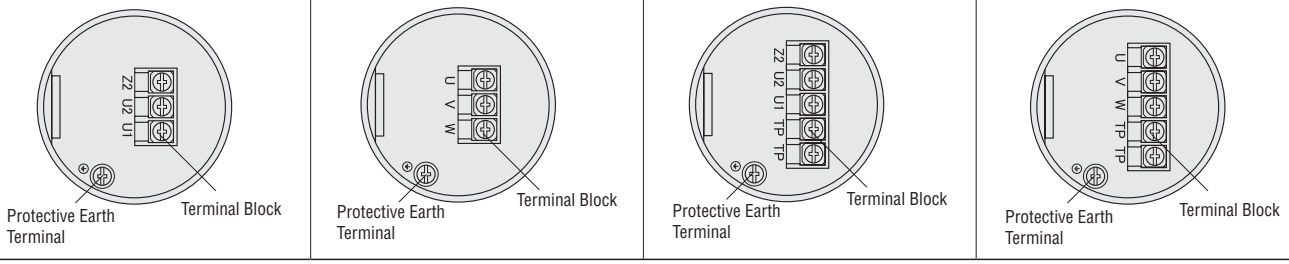
Connection to Protective Earth Terminal

- Insulated Round Terminal



◇Inside of the Terminal Box

Thermal Protector for Automatic Return Type, Impedance Protected		Thermal Protector for Signal Type	
Single-Phase Motor	Three-Phase Motor	Single-Phase Motor	Three-Phase Motor



●Z2, U2, U1 U, V, W: Motor power line, TP: Thermal protector

■List of Motor and Gearhead Combinations

●Combination Type

◇Thermal Protector for Automatic Return Type

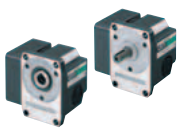
Output Power	Product Name	Motor Product Name	Gearhead Product Name
6 W	**2IK6EB-□S**	2IK6GN-CW2BE	2GN□S
	2IK6SB-□S	2IK6GN-SW2B	
15 W	**3IK15EB-□S**	3IK15GN-CW2BE	3GN□S
	3IK15SB-□S	3IK15GN-SW2B	
25 W	**4IK25EB-□S**	4IK25GN-CW2BE	4GN□S
	4IK25SB-□S	4IK25GN-SW2B	
40 W	**5IK40EB-□S**	5IK40GN-CW2BE	5GN□S
	5IK40SB-□S	5IK40GN-SW2B	

◇Thermal Protector for Signal Type

Output Power	Product Name	Motor Product Name	Gearhead Product Name
15 W	**3IK15EB-□SS**	3IK15GN-CW2BSE	3GN□S
	3IK15SB-□SS	3IK15GN-SW2BS	
25 W	**4IK25EB-□SS**	4IK25GN-CW2BSE	4GN□S
	4IK25SB-□SS	4IK25GN-SW2BS	
40 W	**5IK40EB-□SS**	5IK40GN-CW2BSE	5GN□S
	5IK40SB-□SS	5IK40GN-SW2BS	

Gearheads, Peripheral Equipment

Space Saving
Right-Angle Gearheads
➜ Page C-213



Instantaneous Stop
Brake Pack
➜ Page C-229

Speed Control
Inverters
➜ Page D-136

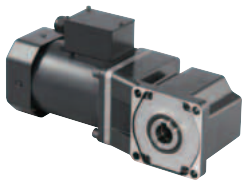
Accessories
Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

●A number indicating the gear ratio is entered where the box □ is located within the product name.

High Power Induction Motors BH Series

200 W
□104 mm


Right-Angle Hollow Shaft


Parallel Shaft

Features

High Power 200 W
Smallest frame size among 200 W output power.

Right-Angle Gearheads Employing Hypoid Gears
The right-angle gearheads employ hypoid gears. Hollow shafts and solid shafts are available to enable space saving.

Tapped Hole at the Shaft End
The gearhead shafts feature a tapped hole for convenient connection with loads.

"Combination Type" for Easy Mounting
The combination type comes with the motor and its dedicated gearhead pre-assembled. This enables easy mounting in equipment.

Combination Type:	This type comes with the motor and its dedicated gearhead pre-assembled. This simplifies installation in equipment. Motors and gearheads are also available separately to facilitate changes in motor and gearhead combinations and if spare gearheads are required.

Specifications – Continuous Rating RoHS

Product Name and Type Combination Type ( ): Round Shaft Type / Terminal Box Type	Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque N·m	Rated Torque N·m	Rated Speed r/min	Capacitor μF
TP **BHI62ET-□RH** **BHI62ET-□RA** **BHI62ET-□** (**BHI62ET-A**)	200	Single-Phase 220	50	1.5	0.98	1.52	1250	10
			60			1.27	1500	
		Single-Phase 230	50			1.52	1250	
			60			1.27	1500	
TP **BHI62ST-□RH** **BHI62ST-□RA** **BHI62ST-□** (**BHI62ST-A**)	200	Three-Phase 200	50	1.1	1.49	1.49	1250	–
			60		1.25	1.25	1500	
		Three-Phase 220	60	0.95	1.23	1.23	1550	
		Three-Phase 230			1.18	1.18	1600	
TP **BHI62UT2-□RH*** **BHI62UT2-□RA*** **BHI62UT2-□*** (**BHI62UT2-A***)	200	Three-Phase 380	50	0.56	1.47	1.47	1300	–
			60	0.54	1.24	1.24	1550	
		Three-Phase 400	50	0.55	1.47	1.47	1300	
			60	0.52	1.24	1.24	1550	
		Three-Phase 415	50	0.54	1.47	1.47	1300	

● A number indicating the gear ratio is entered where the box □ is located within the product name. Also, the values in the table are characteristics for the motor only.
● Safety standards ➜ Page H-2
* These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note
● A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.
TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the power supply off before inspecting.

Degree of Protection

Product Name				Degree of Protection
Hollow Shaft Type	Solid Shaft Type	Parallel Shaft Type	Round Shaft Type	
BHI62ET-□RH **BHI62ST-□RH** **BHI62UT2-□RH**	**BHI62ET-□RA** **BHI62ST-□RA** **BHI62UT2-□RA**	**BHI62ET-□** **BHI62ST-□** **BHI62UT2-□**	**BHI62ET-A*** **BHI62ST-A*** **BHI62UT2-A***	IP54

* Excluding the installation surface of the round shaft type.

Product Line

●Combination Type RoHS

◇Right-Angle Shaft

Type	Power Supply Voltage	Product Name	Gear Ratio
Hollow Shaft Terminal Box Type	Single-Phase 220/230 VAC	**BHI62ET-□RH**	**5～180**
	Three-Phase 200/220/230 VAC	**BHI62ST-□RH**	**5～180**
	Three-Phase 380/400/415 VAC	**BHI62UT2-□RH**	**5～180**
Solid Shaft Terminal Box Type	Single-Phase 220/230 VAC	**BHI62ET-□RA**	**5～180**
	Three-Phase 200/220/230 VAC	**BHI62ST-□RA**	**5～180**
	Three-Phase 380/400/415 VAC	**BHI62UT2-□RA**	**5～180**

The following items are included in each product.
Motor, Gearhead, Capacitor*, Capacitor Cap*, Parallel Key, Operating Manual
*Single-phase motors only

◇Parallel Shaft

Type	Power Supply Voltage	Product Name	Gear Ratio
Terminal Box Type	Single-Phase 220/230 VAC	**BHI62ET-□**	**3～180**
	Three-Phase 200/220/230 VAC	**BHI62ST-□**	**3～180**
	Three-Phase 380/400/415 VAC	**BHI62UT2-□**	**3～180**

The following items are included in each product.
Motor, Gearhead, Capacitor*, Capacitor Cap*, Mounting Screws, Parallel Key, Operating Manual
*Single-phase motors only

●Round Shaft Type RoHS

Type	Power Supply Voltage	Product Name
Terminal Box Type	Single-Phase 220/230 VAC	**BHI62ET-A**
	Three-Phase 200/220/230 VAC	**BHI62ST-A**
	Three-Phase 380/400/415 VAC	**BHI62UT2-A**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

●A number indicating the gear ratio is entered where the box □ is located within the product name.

Page
Features C-61 / System Configuration C-23 / Product Line C-62 / Specifications C-61
Dimensions C-64 / Connection Diagrams C-68 / Motor and Gearhead Combinations C-68

Permissible Torque of Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- Decimal gearheads are not available.

Right-Angle Shaft - 50 Hz

Unit = N·m

Product Name	Speed r/min	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
BHI62ET-□RH, BHI62ET-□RA		5.5	6.7	8.3	10.0	13.9	16.6	20.0	27.7	33.3	36	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA		5.4	6.5	8.2	9.8	13.6	16.3	19.6	27.2	32.6	36	40	43	47	51.5	54.5	60	60	60
BHI62UT2-□RH, BHI62UT2-□RA		5.4	6.4	8.0	9.7	13.4	16.1	19.3	26.8	32.2	36	40	43	47	51.5	54.5	60	60	60

Right-Angle Shaft - 60 Hz

Unit = N·m

Product Name	Speed r/min	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
BHI62ET-□RH, BHI62ET-□RA		4.6	5.6	7.0	8.3	11.6	13.9	16.7	23.2	27.8	33.4	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (200 VAC)		4.6	5.5	6.8	8.2	11.4	13.7	16.4	22.8	27.4	32.9	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (220 VAC)		4.5	5.4	6.7	8.1	11.2	13.5	16.2	22.4	26.9	32.3	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (230 VAC)		4.3	5.2	6.5	7.8	10.8	12.9	15.5	21.5	25.8	31.0	40	43	47	51.5	54.5	60	60	60
BHI62UT2-□RH, BHI62UT2-□RA		4.5	5.4	6.8	8.1	11.3	13.6	16.3	22.6	27.2	32.6	40	43	47	51.5	54.5	60	60	60

Parallel Shaft - 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	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**
BHI62ET-□		4.1	4.9	6.8	8.2	10.3	12.3	16.3	19.6	23.5	32.7	39.2	40	40	40	40	40	40	40	40	40
BHI62ST-□		4.0	4.8	6.7	8.0	10.1	12.1	16.0	19.2	23.1	32.0	38.4	40	40	40	40	40	40	40	40	40
BHI62UT2-□		4.0	4.8	6.6	7.9	9.9	11.9	15.8	19.0	22.8	31.6	37.9	40	40	40	40	40	40	40	40	40

Parallel Shaft - 60 Hz

Unit = N·m

Product Name	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**
BHI62ET-□		3.4	4.1	5.7	6.9	8.6	10.3	13.7	16.4	19.7	27.3	32.8	39.3	40	40	40	40	40	40	40	40
BHI62ST-□ (200 VAC)		3.4	4.1	5.6	6.8	8.4	10.1	13.4	16.1	19.4	26.9	32.3	38.7	40	40	40	40	40	40	40	40
BHI62ST-□ (220 VAC)		3.3	4.0	5.5	6.6	8.3	10.0	13.2	15.9	19.0	26.4	31.7	38.1	40	40	40	40	40	40	40	40
BHI62ST-□ (230 VAC)		3.2	3.8	5.3	6.4	8.0	9.6	12.7	15.2	18.3	25.4	30.4	36.5	40	40	40	40	40	40	40	40
BHI62UT2-□		3.3	4.0	5.6	6.7	8.4	10.0	13.3	16.0	19.2	26.7	32.0	38.4	40	40	40	40	40	40	40	40

Permissible Overhung Load and Permissible Thrust Load

Combination type ➜ Page C-16
Round shaft type ➜ Page C-16

Permissible Load Inertia: J of Gearhead

➜ Page C-17

Dimensions (Unit = mm)

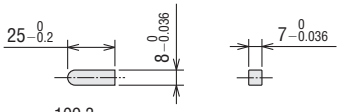
- Mounting screws are included with the combination type with a parallel shaft. Mounting screw dimensions ➜ Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

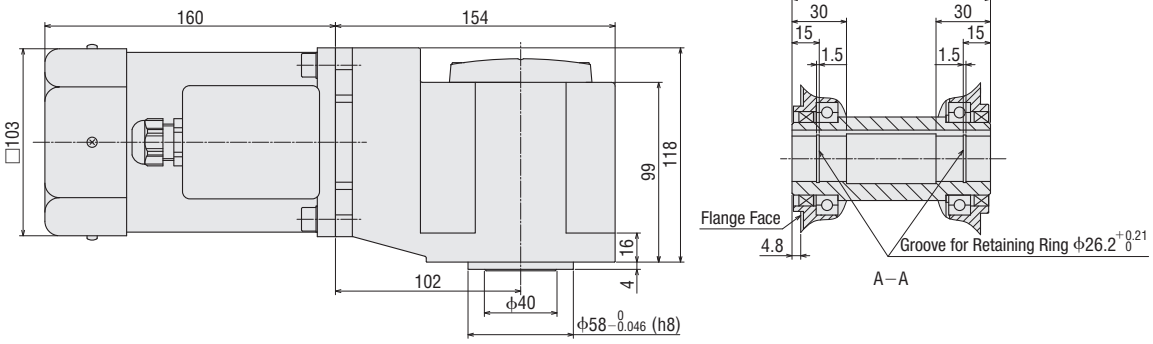
◇Combination Type - Right-Angle Shaft, Hollow Shaft (Terminal box type)

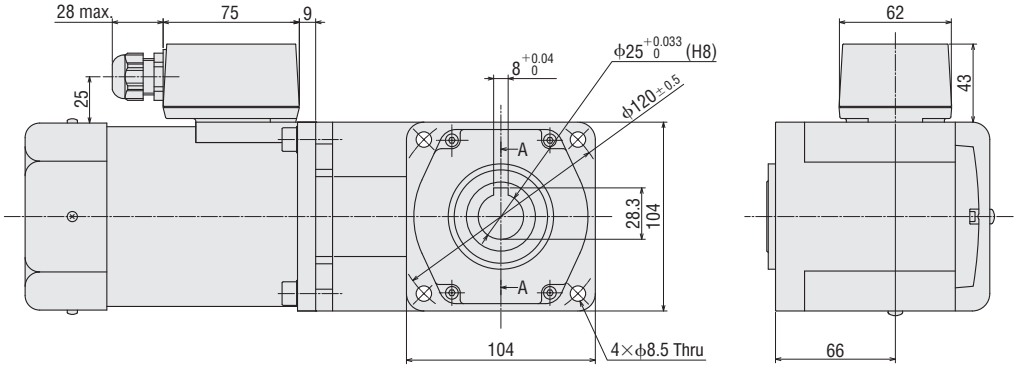
BHI62ET-□RH, BHI62ST-□RH

Motor: BHI62ET-G2, BHI62ST-G2
Gearhead: BH6G2-□RH
Mass: 10.0 kg

◇Key (Included)







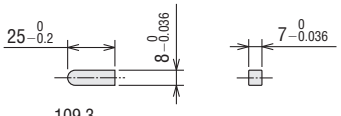
- Applicable cable diameter is ϕ6~ϕ12.
- Details of terminal box ➜ Page C-255

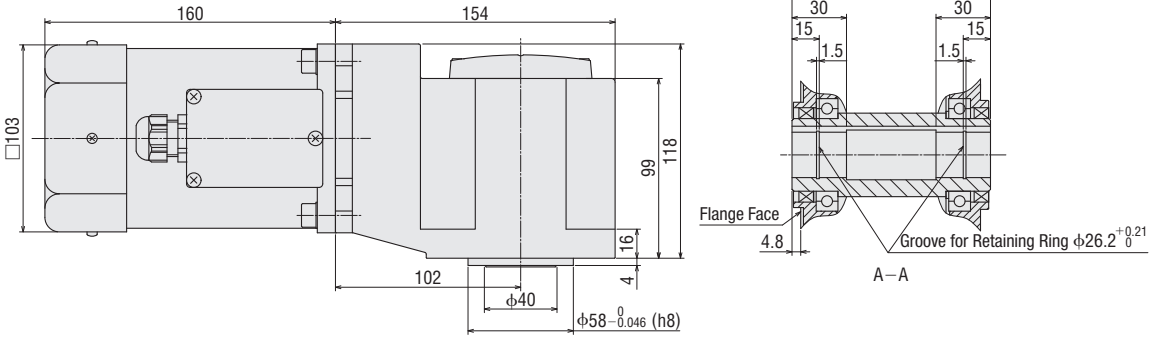
◇Combination Type - Right-Angle Shaft, Hollow Shaft (Terminal box type)

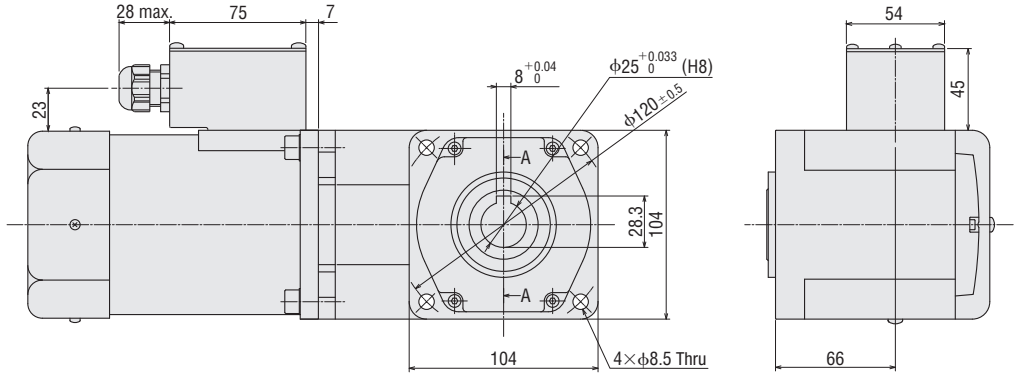
BHI62UT2-□RH

Motor: BHI62UT2-G2
Gearhead: BH6G2-□RH
Mass: 10.0 kg

◇Key (Included)





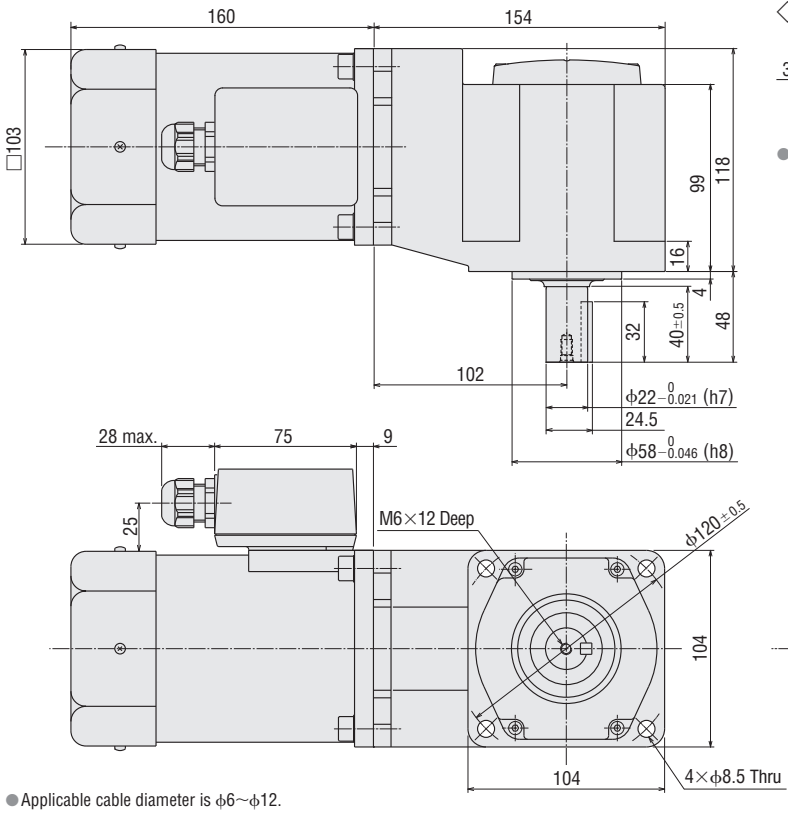


- Applicable cable diameter is ϕ6~ϕ12.
- Details of terminal box ➜ Page C-255

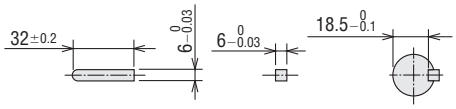
◇Combination Type - Right-Angle Shaft, Solid Shaft (Terminal box type)

BHI62ET-□RA, BHI62ST-□RA

Motor: BHI62ET-G2, BHI62ST-G2
Gearhead: BH6G2-□RA
Mass: 10.0 kg



◇Key and Key Slot (Included)



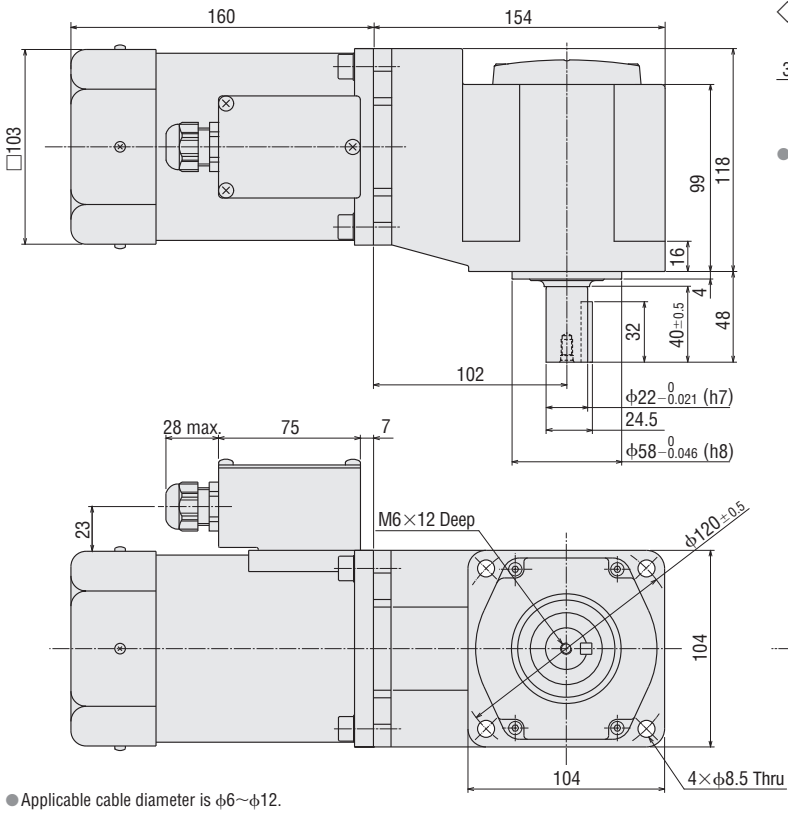
● At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

● Applicable cable diameter is φ6~φ12.
● Details of terminal box ➜ Page C-255

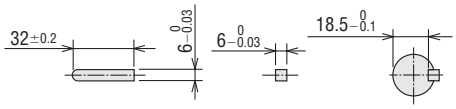
◇Combination Type - Right-Angle Shaft, Solid Shaft (Terminal box type)

BHI62UT2-□RA

Motor: BHI62UT2-G2
Gearhead: BH6G2-□RA
Mass: 10.0 kg



◇Key and Key Slot (Included)

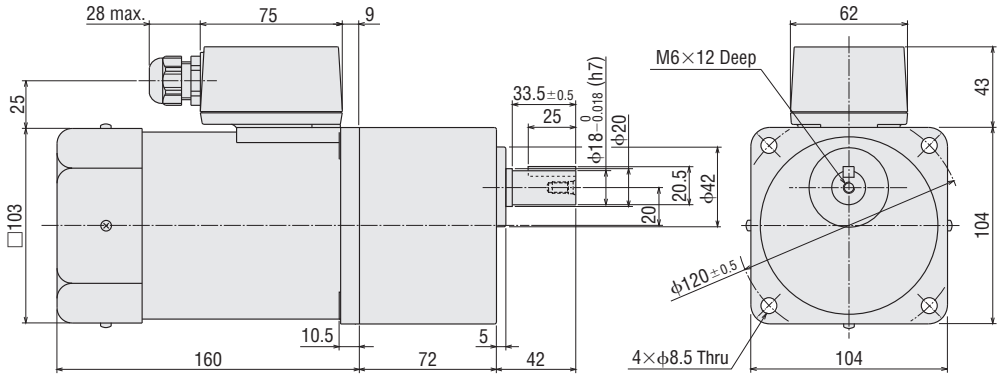


● At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

● Applicable cable diameter is φ6~φ12.
● Details of terminal box ➜ Page C-255

◇Combination Type - Parallel Shaft (Terminal box type)

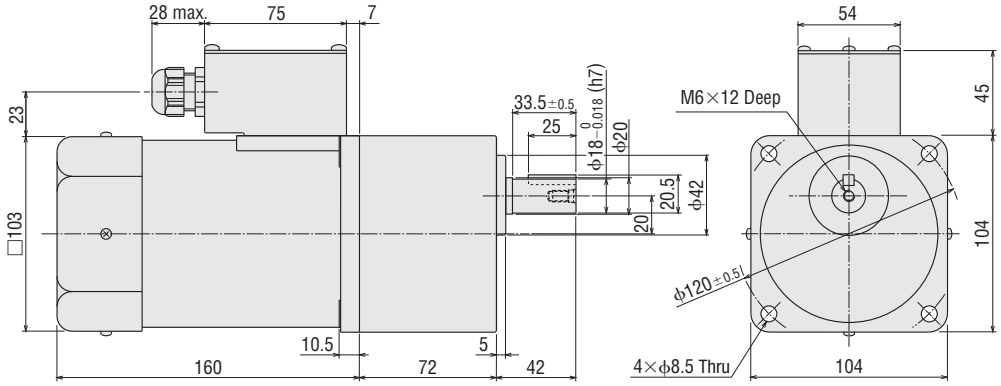
BHI62ET-□
BHI62ST-□
Motor:
BHI62ET-G2
BHI62ST-G2
Gearhead:
BH6G2-□
Mass: 8.0 kg



- Applicable cable diameter is ϕ6～ϕ12.
- Details of terminal box ➜ Page C-255

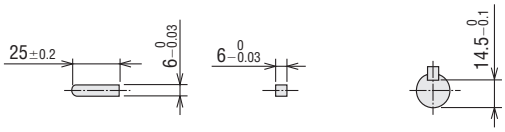
◇Combination Type - Parallel Shaft (Terminal box type)

BHI62UT2-□
Motor:
BHI62UT2-G2
Gearhead:
BH6G2-□
Mass: 8.0 kg



- Applicable cable diameter is ϕ6～ϕ12.
- Details of terminal box ➜ Page C-255

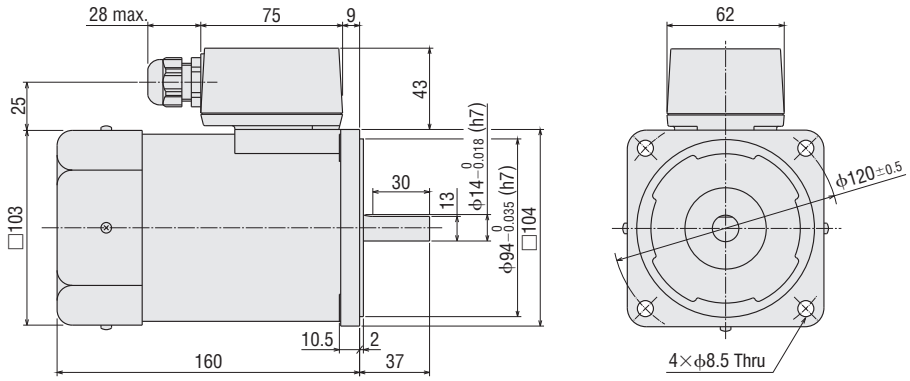
◇Key and Key Slot (Included, common to **BHI62** type)



- At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

◇Round Shaft Type - Terminal Box Type

BHI62ET-A, **BHI62ST-A**
Mass: 5.0 kg

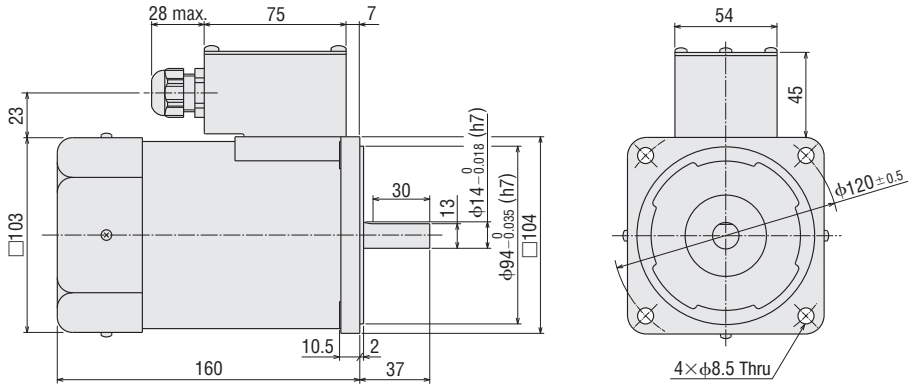


- Applicable cable diameter is ϕ6～ϕ12.
- Details of terminal box ➜ Page C-255

◇Round Shaft Type - Terminal Box Type

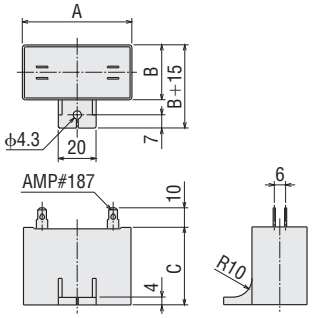
BHI62UT2-A

Mass: 5.0 kg



- Applicable cable diameter is ϕ6~ϕ12.
- Details of terminal box ➜ Page C-255

◇Capacitor (Included with single-phase motors)



◇Capacitor Dimensions (mm)

Product Name / Terminal Box Type	Capacitor Product Name	A	B	C	Mass (g)
BHI62ET-□RH **BHI62ET-□RA** **BHI62ET-□** **BHI62ET-A**	CH100BFAUL	58	35	50	132

- A capacitor cap is included with the capacitor.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

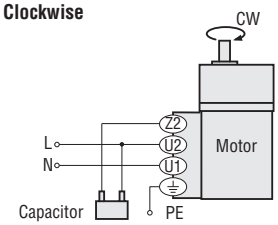
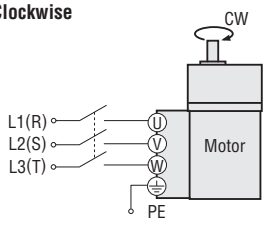
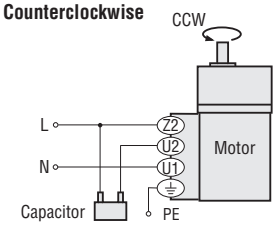
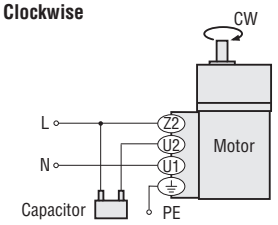
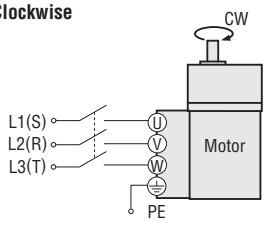
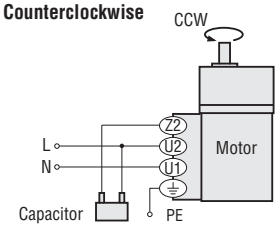
Mounting Method for Right Angle - Hollow Shaft Type

➜ Page C-220

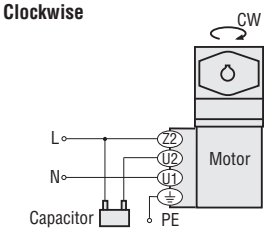
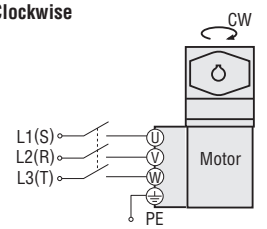
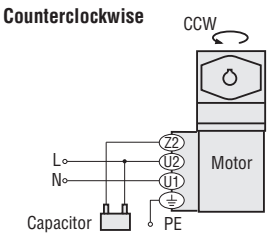
Connection Diagrams

●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.

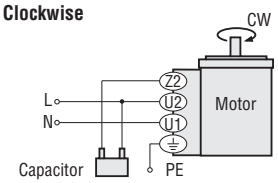
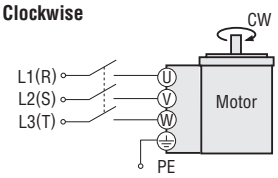
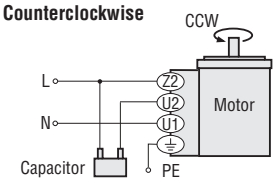
●Combination Type: Parallel Shaft

Single-Phase	Three-Phase
BHI62ET-3~9 BHI62ET-50~180	**BHI62ST-3~9, 50~180 BHI62UT2-3~9, 50~180**
Clockwise 	**Clockwise** 
Counterclockwise 	**Counterclockwise** To change the rotation direction, change any two connections between R, S and T.
BHI62ET-12.5~36	**BHI62ST-12.5~36 BHI62UT2-12.5~36**
Clockwise 	**Clockwise** 
Counterclockwise 	**Counterclockwise** To change the rotation direction, change any two connections between R, S and T.

●Combination Type: Right Angle Shaft

Single-Phase	Three-Phase
Clockwise 	**Clockwise** 
Counterclockwise 	**Counterclockwise** To change the rotation direction, change any two connections between R, S and T.

●Round Shaft Type

Single-Phase	Three-Phase
Clockwise 	**Clockwise** 
Counterclockwise 	**Counterclockwise** To change the rotation direction, change any two connections between R, S and T.

Note

- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.
- Connect a CR circuit to protect the connector point of switches.
  Connecting CR circuit, contact capacity ➜ Page C-255
- For added safety, provide a breaker or fuse on the power supply input.
- How to connect a capacitor ➜ Page C-255

List of Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

●Combination Type: Right Angle Shaft

Product Name	Motor Product Name	Gearhead Product Name
BHI62ET-□RH	BHI62ET-G2	BH6G2-□RH
BHI62ET-□RA		BH6G2-□RA
BHI62ST-□RH	BHI62ST-G2	BH6G2-□RH
BHI62ST-□RA		BH6G2-□RA
BHI62UT2-□RH	BHI62UT2-G2	BH6G2-□RH
BHI62UT2-□RA		BH6G2-□RA

●Combination Type: Parallel Shaft

Product Name	Motor Product Name	Gearhead Product Name
BHI62ET-□	BHI62ET-G2	BH6G2-□
BHI62ST-□	BHI62ST-G2	BH6G2-□
BHI62UT2-□	BHI62UT2-G2	BH6G2-□

Peripheral Equipment

Speed Control

Inverters
➜ Page D-136

Accessories

Mounting Brackets
➜ Page C-240

Couplings
➜ Page C-245

●A number indicating the gear ratio is entered where the box □ is located within the product name or gearhead product name.