

Standard AC Motors

Constant Speed Motors

Three-Phase Induction Motors

Three-Phase Induction Motors

Overview, Product Series

Constant Speed Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

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2-Pole, High-Speed Type [60 W~150 W (1/12 HP~1/5 HP)] ... C-109

Features and Types of Three-Phase Induction Motors

- Induction Motors
- Electromagnetic Brake Motors
- High-Efficiency KIIS Series
- 60 W (1/12 HP)
- 100 W (1/8 HP)

Features of Three-Phase Induction Motors

● **Optimal for Uni-Directional and Continuous Operation**
 Induction motors are optimal for uni-directional and continuous operation such as a conveyor system.

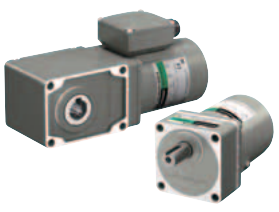

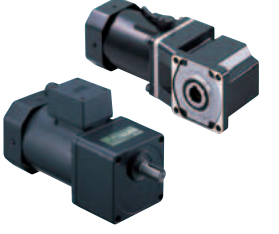
● **Speed Control Operation**
 Combined use of an inverter with a three-phase motor enables speed control operation.

● **Extensive Product Line**
 The **KIIS** Series, World **K** Series and **BH** Series are available. We have motors with an output power range of 6 W (1/125 HP) to 200 W (1/4 HP) to meet your specific application.

● **Compatible with Various Gearheads**
 Combination with a gearhead allows the motor speed to be reduced to the required speed or generate higher torque.

Types of Three-Phase Induction Motors

- Induction Motors
- 6 W (1/125 HP)
- 15 W (1/150 HP)
- 25 W (1/30 HP)
- 40 W (1/19 HP)
- 60 W (1/12 HP)
- 90 W (1/8 HP)
- BH Series 200 W (1/4 HP)
- 2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

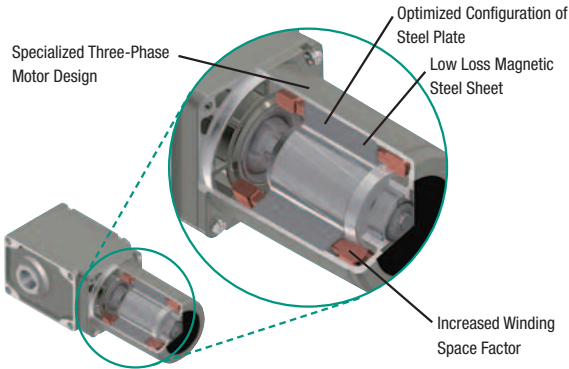
Series	Features, Lineup									
<p>KIIS Series</p>  <p>UL[®] US CCC CE</p>	<ul style="list-style-type: none"> ● High Efficiency Three-Phase Motors through Optimal Design A review of the basic motor design has yielded unprecedented high efficiency and energy savings. ● Best Characteristics with Inverter Combination Speed can be controlled over a wide range, and high torque is exerted even at low speeds. Because it is a high-performance motor with little speed reduction even with a large load, stabilized speed control is possible. 	<ul style="list-style-type: none"> ● Product Line <table border="1" style="width: 100%;"> <tr> <td>Frame Size</td> <td>□90 mm (□3.54 in.)</td> </tr> <tr> <td>Output Power</td> <td>Right-Angle Geared: 100 W (1/8 HP) Parallel Shaft Combination: 60 W (1/12 HP), 100 W (1/8 HP) Round Shaft: 60 W (1/12 HP), 100 W (1/8 HP)</td> </tr> <tr> <td>Voltage</td> <td>Three-Phase 220/230 VAC</td> </tr> </table>	Frame Size	□90 mm (□3.54 in.)	Output Power	Right-Angle Geared: 100 W (1/8 HP) Parallel Shaft Combination: 60 W (1/12 HP), 100 W (1/8 HP) Round Shaft: 60 W (1/12 HP), 100 W (1/8 HP)	Voltage	Three-Phase 220/230 VAC		
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Voltage	Three-Phase 220/230 VAC									
<p>World K Series</p>  <p>UL[®] US CCC[*] CE</p> <p><small>* Except Conduit Box Type</small></p>	<ul style="list-style-type: none"> ● Conforms to Safety Standards All World K Series motors have an overheat protection device built-in and conform to major safety standards. ● Applicable Standards UL/CSA Standards Certified under the China Compulsory Certification System* (CCC System) CE Marking (Low Voltage Directive) <small>* Except Conduit Box Type</small> ● Motor Overheat Protection Device Thermal protector, Impedance protected 	<ul style="list-style-type: none"> ● Product Line <table border="1" style="width: 100%;"> <tr> <td>Frame Size</td> <td>□60 mm (□2.36 in.)~□90 mm (□3.54 in.)</td> </tr> <tr> <td>Output Power</td> <td>Lead Wire Type: 6 W~40 W (1/125 HP~1/19 HP) Terminal Box Type: 25 W~40 W (1/30 HP~1/19 HP) Conduit Box Type: 25 W~90 W (1/30 HP~1/8 HP) 2-Pole, High-Speed Type: 60 W~150 W (1/12 HP~1/5 HP)</td> </tr> <tr> <td>Voltage</td> <td>Three-Phase 220/230 VAC</td> </tr> </table>	Frame Size	□60 mm (□2.36 in.)~□90 mm (□3.54 in.)	Output Power	Lead Wire Type: 6 W~40 W (1/125 HP~1/19 HP) Terminal Box Type: 25 W~40 W (1/30 HP~1/19 HP) Conduit Box Type: 25 W~90 W (1/30 HP~1/8 HP) 2-Pole, High-Speed Type: 60 W~150 W (1/12 HP~1/5 HP)	Voltage	Three-Phase 220/230 VAC		
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Voltage	Three-Phase 220/230 VAC									
<p>BH Series</p>  <p>UL[®] US CCC CE</p>	<ul style="list-style-type: none"> ● Smallest Frame Size among 200 W (1/4 HP) Motors These motors achieve a high output of 200 W (1/4 HP) with a frame size of 104 mm (4.09 in.). ● Hypoid Gear Right Angle Type is Available ● "Combination Type" for Easy Installation With each combination type, the motor and gearhead come pre-assembled for easy installation. ● Conforms to Safety Standards and Global Voltage Specifications 	<ul style="list-style-type: none"> ● Tapped Hole at the Shaft End The gearhead shaft features a tapped hole for convenient connection with loads. ● Product Line <table border="1" style="width: 100%;"> <tr> <td>Frame Size</td> <td>□104 mm (□4.09 in.)</td> </tr> <tr> <td>Output Power</td> <td>200 W (1/4 HP)</td> </tr> <tr> <td>Type</td> <td>Terminal Box Type: Right-Angle, Hollow Shaft Type, Right-Angle, Solid Shaft Type, Parallel Shaft Type, Round Shaft Type Cable Type: Right-Angle, Hollow Shaft Type, Right-Angle, Solid Shaft Type, Parallel Shaft Type, Round Shaft Type</td> </tr> <tr> <td>Voltage</td> <td>Three-Phase 220/230 VAC</td> </tr> </table>	Frame Size	□104 mm (□4.09 in.)	Output Power	200 W (1/4 HP)	Type	Terminal Box Type: Right-Angle, Hollow Shaft Type, Right-Angle, Solid Shaft Type, Parallel Shaft Type, Round Shaft Type Cable Type: Right-Angle, Hollow Shaft Type, Right-Angle, Solid Shaft Type, Parallel Shaft Type, Round Shaft Type	Voltage	Three-Phase 220/230 VAC
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Voltage	Three-Phase 220/230 VAC									

Features of the KIIS Series

High Efficiency Three-Phase Motors through Optimal Design

High Efficiency at a Maximum of 73%

Specialized components and an optimal magnetic design are used to make high efficiency three-phase motors with a maximum efficiency of 73%. Motors are fanless with increased motor torque.



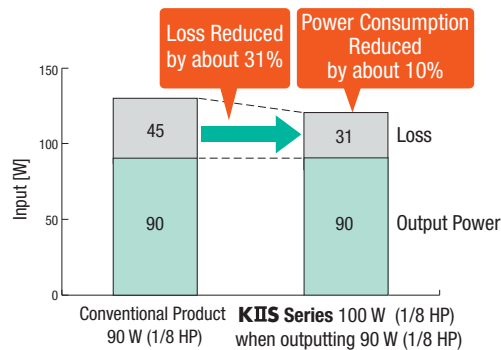
Comparison of Maximum Efficiency (Reference values)

	60 W (1/12 HP) (60 Hz)	100 W (1/8 HP)* (60 Hz)
KIIS Series	70%	73.9%
Conventional Product	65.7%	66.7%

*Conventional product values are for 90 W (1/8 HP)

Power Consumption Reduced by up to 10%

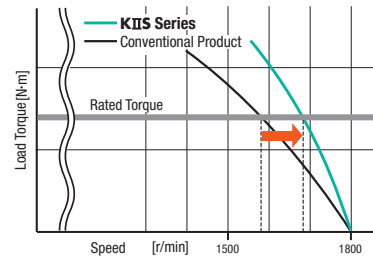
Compared to a conventional 90 W (1/8 HP) motor under the same conditions, power consumption is reduced by a maximum of about 10%, contributing to the equipment's energy savings.



High Performance

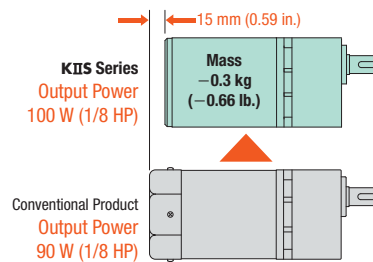
Characteristics have been improved through pursuit of the specifications required for the three-phase motor and a review of the design to create a high-performance motor with little speed reduction even with a large load.

Changes in Speed according to Load



Increased Motor Output Power

Output power of 100 W (1/8 HP) in a 90 mm (3.54 in.) frame size is achieved through increased efficiency. An overall length 15 mm (0.59 in.) shorter than the conventional motor contributes to equipment downsizing.



Fanless

With reduced loss, there is less heat generation in the motor, so the cooling fan that was incorporated into the conventional 60 W (1/12 HP) min. products is no longer included.



No Dust, etc.

With no cooling fan, dust is not blown around.

Overview,
Product
Series

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Three-Phase
Induction
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Single-Phase
Induction
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Reversible
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Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

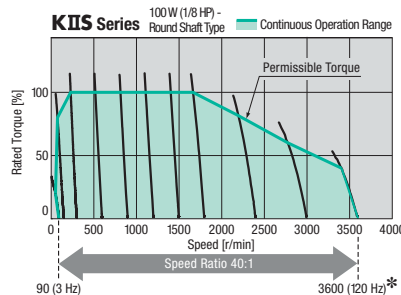
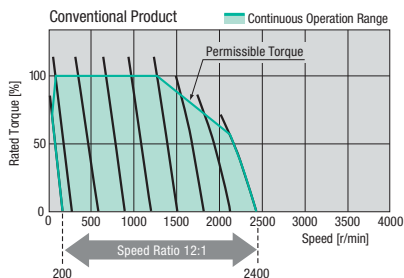
Installation

Best Characteristics Achieved when Combined with an Inverter

● Wide Range of Speeds

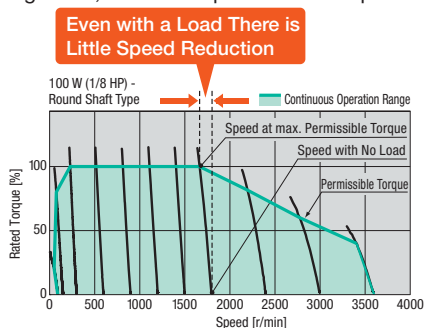
Speed can be controlled over a wide range using an inverter, from 3~120 Hz*. Also, with improved characteristics, high torque can be exerted even at low speeds.

*80 Hz with a right-angle shaft



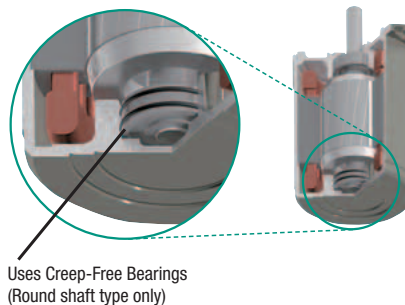
● Improved Speed Stability

Because it is a high-performance motor with little speed reduction even with a large load, stabilized speed control is possible.



● Handles High-Speed Rotation (Round shaft type)

Creep-free bearings, etc. are used in the round shaft type, and components capable of handling high-speed rotation have been selected and designed for inverter control.

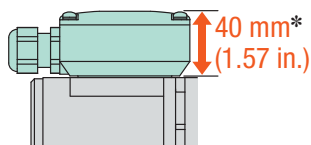


Slim Body Terminal Box (Terminal box type)

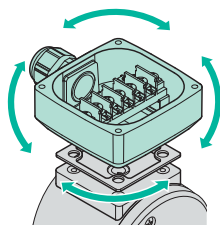
● Equipped with an Easy-to-Wire Slim Body Terminal Box

This new shape of terminal box is designed to make wiring the terminal block easier.

It has a slim body, with a cable outlet that can be rotated in 90° increments for 4 possible directions.



*The round shaft type is 46 mm (1.81 in.).



● IP66-Compliant Drip-Proof Specification

The seal structure for the motor, gearhead and terminal box components has been strengthened. The terminal box type* is compliant with the IP66 degree of protection.

*Excluding installation surface of round shaft type

IP66:

The IP indication that shows the watertight and dust-resistant performance are specified under IEC 60529 and IEC 60034-5.

Main Specifications

- Material
 - Case and terminal box: Aluminum
 - Output shaft: S45C
 - Screws: Stainless steel (externally facing screws only)
- Surface Treatment
 - Case and terminal box: Painted (excluding installation surface)

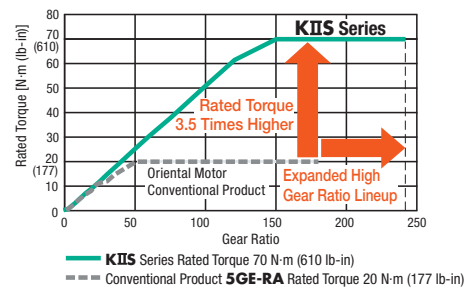
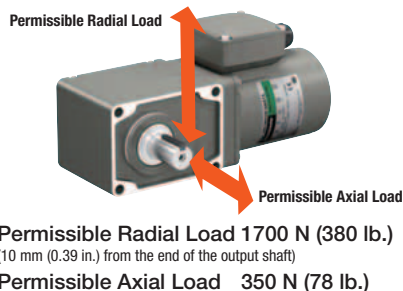
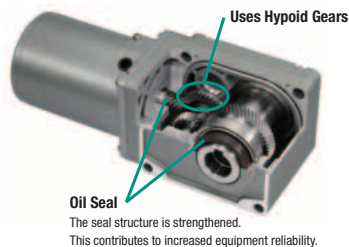
- Induction Motors
- Electromagnetic Brake Motors
- High-Efficiency KIIS Series
- 60 W (1/12 HP)
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- Induction Motors
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- 2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

High-Strength Gearhead

Uses a gearhead that excels in both torque and strength.

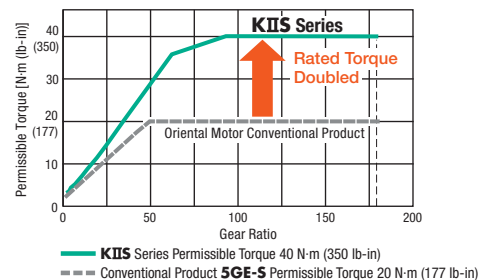
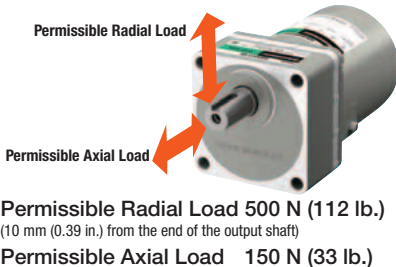
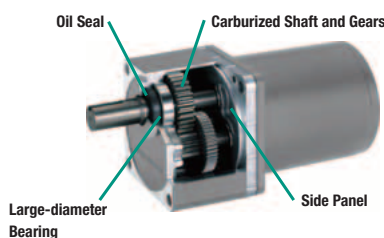
Right-Angle Geared Type

Internal Gearhead Structure



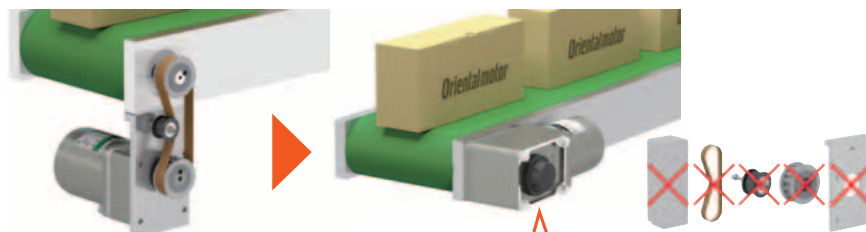
Parallel Shaft Combination Type

Internal Gearhead Structure

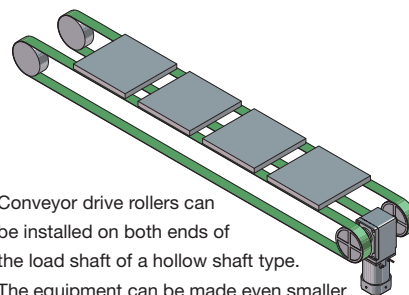


Benefits of Using the Right-Angle Geared Type

Connect the Drive Shaft Directly to a Hollow Shaft Geared Type to Reduce Costs

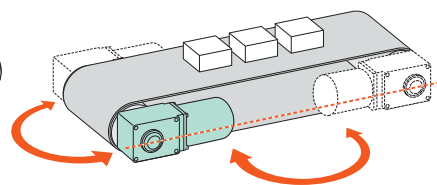
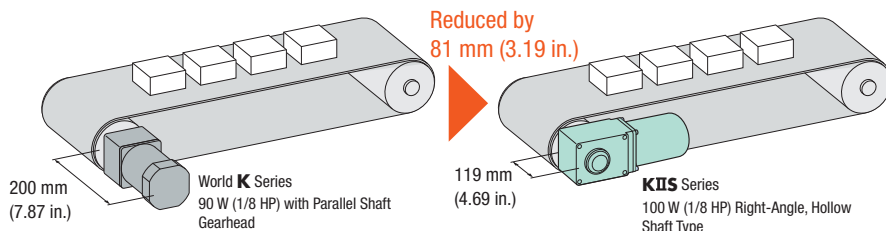


- Component cost reduction through reduction of fastening parts
- Assembly steps reduced through mechanism simplification
- Reduced maintenance, such as belt tension adjustment
- Space saving



Conveyor drive rollers can be installed on both ends of the load shaft of a hollow shaft type. The equipment can be made even smaller compared to when the motor is installed on the side of the conveyor.

Motor Mounted Perpendicularly to Load to Save Space



Because the output shaft of the gear is vertically in the middle of the installation surface, it is possible to change the installation direction horizontally. Installation to suit the application can be selected.

Overview, Product Series

Constant Speed Induction Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

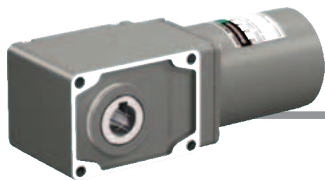
Accessories

Installation

System Configuration

● Right-Angle Geared Type

KIIS Series



AC Power Supply
(Main power supply)

Accessories (Sold separately)



Flexible Couplings
→ Page C-201
Solid shaft type only



Torque Arms
→ Page C-200
Hollow shaft type only



CR Circuit for Surge Suppression
→ Page C-208

● Example of System Configuration

Induction Motor	Sold Separately	
	Torque Arm	CR Circuit for Surge Suppression
5IK100VES-GHR25 \$317.00	SOT5A \$23.00	EPCR1201-2 \$5.00

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

● Parallel Shaft Combination Type

KIIS Series

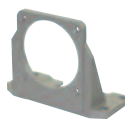


AC Power Supply
(Main power supply)

Accessories (Sold separately)



Flexible Couplings
→ Page C-201



Mounting Brackets
→ Page C-196



CR Circuit for Surge Suppression
→ Page C-208

● Example of System Configuration

Induction Motor	Sold Separately		
	Mounting Bracket	Flexible Coupling	CR Circuit for Surge Suppression
5IK60VEST2-25A \$261.00	SOL5UBF \$29.00	MCL5518F12 \$97.00	EPCR1201-2 \$5.00

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

- Induction Motors
- Electromagnetic Brake Motors
- High-Efficiency KIIS Series
- 60 W (1/12 HP)
- 100 W (1/8 HP)
- Induction Motors
- 6 W (1/125 HP)
- 15 W (1/150 HP)
- 25 W (1/30 HP)
- 40 W (1/19 HP)
- 60 W (1/12 HP)
- 90 W (1/8 HP)
- BH Series 200 W (1/4 HP)
- 2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

Product Line of Three-Phase Induction Motors

Induction Motors

Series	Voltage (VAC)	Type	Motor Frame Size, Output Power									
			□60 mm (□2.36 in.)	□70 mm (□2.76 in.)	□80 mm (□3.15 in.)	□90 mm (□3.54 in.)			□104 mm (□4.09 in.)			
			6 W (1/125 HP)	15 W (1/50 HP)	25 W (1/30 HP)	40 W (1/19 HP)	60 W (1/12 HP)	90 W (1/8 HP)	100 W (1/8 HP)	150 W (1/5 HP)	200 W (1/4 HP)	
KIIS Series Right-Angle Geared Type	Three-Phase 220/230	Terminal Box Type										
		Lead Wire										
KIIS Series Parallel Shaft Combination Type Round Shaft Type	Three-Phase 220/230	Terminal Box Type										
		Lead Wire										
World K Series	Three-Phase 220/230	Terminal Box										
		Conduit Box										
		Lead Wire										
2-Pole, High-Speed Type	Three-Phase 220/230	Terminal Box										
		Lead Wire										
BH Series	Three-Phase 220/230	Terminal Box										
		Cable										

Electromagnetic Brake Type Motor

Series	Voltage (VAC)	Type	Motor Frame Size, Output Power									
			□60 mm (□2.36 in.)	□70 mm (□2.76 in.)	□80 mm (□3.15 in.)	□90 mm (□3.54 in.)			□104 mm (□4.09 in.)			
			6 W (1/125 HP)	15 W (1/50 HP)	25 W (1/30 HP)	40 W (1/19 HP)	60 W (1/12 HP)	90 W (1/8 HP)	100 W (1/8 HP)	200 W (1/4 HP)		
KIIS Series Right-Angle Geared Type	Three-Phase 220/230	Terminal Box Type										
		Cables										
KIIS Series Parallel Shaft Combination Type Round Shaft Type	Three-Phase 220/230	Terminal Box Type										
		Cables										
World K Series	Three-Phase 220/230	Lead Wire										
BH Series	Three-Phase 220/230	Terminal Box Type										

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Clutch &
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Low-Speed
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Torque
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Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

Installation

Product Number

● **KII** Series

◇ Right-Angle Geared Type

5 I K 100 V ES M T2 - GHR 15

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

◇ Parallel Shaft Combination Type

5 I K 100 V ES M T2 - 15A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑩

◇ Round Shaft Type

5 I K 100 V A - ES T2

① ② ③ ④ ⑤ ⑩ ⑥ ⑧

①	Motor Frame Size	5 : 90 mm (3.54 in.)
②	Product Name	I : Induction Motor
③	Series	K : KII Series
④	Output Power (W)	(Example) 100 : 100 W (1/8 HP)
⑤	V : Three-Phase High Efficiency Motor	
⑥	Power Supply Voltage/Number of Poles	ES : Three-Phase 220/230 VAC 4-Pole
⑦	M : Power Off Activated Electromagnetic Brake Type	
⑧	T2 : Terminal Box Type Blank: Lead Wire Type or Cable Type	
⑨	Output Shaft Type and Direction	GHR : Hollow Shaft Type GAR : Solid Shaft Type (R shaft) GAL : Solid Shaft Type (L shaft)
⑩	Gear Ratio and Shaft Configuration	Number: Gear Ratio for Gearhead A : Round Shaft Type

● **World K** Series

5 I K 40 GN - SW 2 T

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Motor Frame Size	2 : 60 mm (2.36 in.) 3 : 70 mm (2.76 in.) 4 : 80 mm (3.15 in.) 5 : 90 mm (3.54 in.)
②	Motor Type	I : Induction Motor
③	Series	K : K Series
④	Output Power (W)	(Example) 40 : 40 W (1/19 HP)
⑤	Motor Shaft Type, Type of Pinion	A : Round Shaft GN : GN Type Pinion Shaft GE : GE Type Pinion Shaft
⑥	Power Supply Voltage/Number of Poles	SW : Three-Phase 220/230 VAC 4-Pole TW : Three-Phase 220/230 VAC 2-Pole
⑦	2 : RoHS-Compliant	
⑧	T : Terminal Box Type M : Power Off Activated Type Electromagnetic Brake	

◇ Conduit Box Type

5 I K 40 GN - S H

① ② ③ ④ ⑤ ⑥ ⑦

①	Motor Frame Size	4 : 80 mm (3.15 in.) 5 : 90 mm (3.54 in.)
②	Motor Type	I : Induction Motor
③	Series	K : K Series
④	Output Power (W)	(Example) 40 : 40 W (1/19 HP)
⑤	Motor Shaft Type, Type of Pinion	A, AA : Round Shaft GN : GN Type Pinion Shaft GE : GE Type Pinion Shaft
⑥	Power Supply Voltage	S : Three-Phase 220/230 VAC
⑦	H : Conduit Box Type	

Shaft Placement of Solid Shaft Type

For the solid shaft type, either a right or left facing output shaft can be selected. Select the type that best suits the application.



- Output gear shaft direction when seen from the protective earth terminal side.
- For motors equipped with a terminal box, the terminal box is on the opposite side.

Induction Motors

Electromagnetic Brake Motors

High-Efficiency KII Series

60 W (1/12 HP)

100 W (1/8 HP)

Induction Motors

6 W (1/125 HP)

15 W (1/150 HP)

25 W (1/30 HP)

40 W (1/19 HP)

60 W (1/12 HP)

90 W (1/8 HP)

BH Series 200 W (1/4 HP)

2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

● Gearhead

5 GN 50 SA

- ① ② ③ ④

①	Gearhead Frame Size	2: 60 mm (2.36 in.)	3: 70 mm (2.76 in.)	4: 80 mm (3.15 in.)	5: 90 mm (3.54 in.)
②	Type of Pinion	GN: GN Type Pinion GE: GE Type Pinion			
③	Gear Ratio	(Example) 50: Gear Ratio of 50:1 10X denotes the decimal gearhead of gear ratio 10:1			
④	GN Type Pinion	SA: Long Life, Low Noise GN-S Gearhead RH: Right-Angle, Hollow Shaft Gearhead RAA: Right-Angle, Solid Shaft Gearhead			
	GE Type Pinion	SA: Long Life GE-S Gearhead RH: Right-Angle, Hollow Shaft Gearhead RAA: Right-Angle, Solid Shaft Gearhead			

● BH Series

BH I 6 2 S M T - 100 RH

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Series	BH: BH Series			
②	Motor Type	I: Induction Motor			
③	Motor Frame Size	6: 104 mm (4.09 in.)			
④	Output Power (W)	(Example) 2: 200 W (1/4 HP)			
⑤	Power Supply Voltage	S: Three-Phase 220/230 VAC			
⑥	M: Power Off Activated Type Electromagnetic Brake				
⑦	T: Terminal Box Type	Blank: Cable Type			
⑧	Gear Ratio, Motor Shaft Type	A: Round Shaft Type Number: Gear Ratio of Combination Type			
⑨	Type of Gearhead (Combination type only)	RH: Right-Angle, Hollow Shaft Type RA: Right-Angle, Solid Shaft Type Blank: Parallel Shaft Type			

Overview, Product Series

Constant Speed Induction Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

General Specifications

● **KIIS Series**

◇ **Right-Angle Geared Type**

Item	Specifications
Insulation Resistance	100 MΩ or more when a 500 VDC megger is applied between the motor windings and the case after continuous operation under normal ambient temperature and humidity.
Dielectric Voltage	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the motor windings and the case for 1 minute after continuous operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings is 80°C (144°F) or less measured by the resistance change method after rated load continuous operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Operating Ambient Temperature	0~+40°C (+32~+104°F) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Terminal Box Type: IP66 Refer to page C-24 for the materials and surface treatments. Lead Wire Type: IP20 Cable Type: IP40

Note

- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.

◇ **Parallel Shaft Combination Type/Round Shaft Type**

Item	Specifications
Insulation Resistance	100 MΩ or more when a 500 VDC megger is applied between the motor windings and the case after continuous operation under normal ambient temperature and humidity.
Dielectric Voltage	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the motor windings and the case for 1 minute after continuous operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat sink (200 × 200 mm (7.87 × 7.87 in.), 5 mm (0.20 in.) thick, material: aluminum) is connected to the motor and the winding temperature rise is measured at 80°C (144°F) or less using the resistance change method after rated load continuous operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Operating Ambient Temperature	-10~+40°C (+14~+104°F) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Terminal Box Type: IP66 (Except for installation surface of round shaft type) Refer to page C-24 for the materials and surface treatments. Lead Wire Type: IP20 Cable Type: IP40

Note

- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.

● **World K Series**

◇ **6 W (1/125 HP)~90 W (1/8 HP) Type, 2-Pole/High-Speed Type**

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 70°C (126°F) or less measured by the resistance change method after rated operation under normal ambient temperature and humidity with connecting a gearhead or equivalent heat radiation plate*.
Thermal Class	130 (B)
Overheat Protection	6 W (1/125 HP) type has impedance protection. Other Types Built-in thermal protector (automatic return type) Open: 130±5°C (266±9°F), Close: 82±15°C (179.6±27°F) Three-Phase 15 W (1/50 HP) Type Open: 130±5°C (266±9°F), Close: 90±15°C (194±27°F)
Ambient Temperature	-10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead Wire Type: IP20 Lead wire type with electromagnetic brake 60 W (1/12 HP), 90 W (1/8 HP): IP40 Terminal Box Type, Conduit Box Type: IP54 (excluding the installation surface of the round shaft type)

* Heat radiation plate (Material: Aluminum)

Motor Type	Size: mm (in.)	Thickness: mm (in.)
6 W (1/125 HP) Type	115×115 (4.53×4.53)	5 (0.20)
15 W (1/50 HP) Type	125×125 (4.92×4.92)	
25 W (1/30 HP) Type	135×135 (5.31×5.31)	
40 W (1/19 HP) Type (2-Pole, High-Speed 5IK60 Type)	165×165 (6.50×6.50)	
60 W (1/12 HP), 90 W (1/8 HP), 150 W (1/5 HP) Type	200×200 (7.87×7.87)	

Induction Motors
Electromagnetic Brake Motors
High-Efficiency KIIS Series
60 W (1/12 HP)
100 W (1/8 HP)

Induction Motors
6 W (1/125 HP)
15 W (1/150 HP)
25 W (1/30 HP)
40 W (1/19 HP)
60 W (1/12 HP)
90 W (1/8 HP)

BH Series
200 W (1/4 HP)
2-Pole, High-Speed
60-150 W (1/12-1/5 HP)

● **BH Series**

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 70°C (126°F) or less measured by the resistance change method after rated operation under normal ambient temperature and humidity with connecting a gearhead or equivalent heat radiation plate*.
Thermal Class	130 (B)
Overheat Protection	Built-in thermal protector (automatic return type) Open: 150±5°C, (302±9°F), Close: 96±15°C (204.8±27°F)
Ambient Temperature	-10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Cable Type: IP40 Terminal Box Type: IP54 (excluding the installation surface of the round shaft type)

* Heat radiation plate: 230×230 mm (9.06×9.06 in.), Thickness: 5 mm (0.20 in.) (Material: Aluminum)

Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

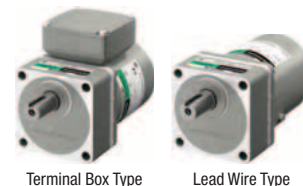
Installation

Induction Motors

60 W (1/12 HP)

□90 mm (□3.54 in.)

Parallel Shaft Combination Type/Round Shaft Type



Terminal Box Type

Lead Wire Type

Induction Motors

Electromagnetic Brake Motors

High-Efficiency KIIS Series

60 W (1/12 HP)

100 W (1/8 HP)

Induction Motors

6 W (1/125 HP)

15 W (1/150 HP)

25 W (1/30 HP)

40 W (1/19 HP)

60 W (1/12 HP)

90 W (1/8 HP)

BH Series 200 W (1/4 HP)

2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

Specifications – Continuous Rating



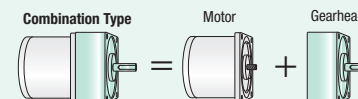
Product Name Upper Level: Combination Type Lower Level: Round Shaft Type		Output		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed
Terminal Box Type	Lead Wire Type	W	HP	VAC	Hz	A	mN·m	oz·in	mN·m	oz·in	r/min
5IK60VEST2-□A 5IK60VA-EST2	5IK60VES-□A 5IK60VA-ES	60	1/12	Three-Phase 220	50	0.37	600	85	410	58	1400
					60	0.33	500	71	350	49	1670
		60	1/12	Three-Phase 230	50	0.38	600	85	410	58	1400
					60	0.33	500	71	350	49	1670

- The values in the table are characteristics for the motor only.
- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
- Use an inverter setting frequency of 120 Hz or less when driving in combination with the inverter.

Product Line

Combination Type

Motor and gearhead are delivered pre-assembled. The combination of motors and gearheads can be changed and they are also available separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.



● Combination Type with Parallel Shaft

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK60VEST2-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$250.00
		25, 30, 36, 50, 60, 75, 90, 100	\$261.00
		120, 150, 180	\$271.00
		250, 300	\$305.00
Lead Wire Type	5IK60VES-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$228.00
		25, 30, 36, 50, 60, 75, 90, 100	\$239.00
		120, 150, 180	\$249.00
		250, 300	\$283.00

● Round Shaft Type

Type	Product Name	List Price
Terminal Box Type	5IK60VA-EST2	\$138.00
Lead Wire Type	5IK60VA-ES	\$116.00

The following items are included with each product.
Motor, Operating Manual

The following items are included with each product.
Motor, Gearhead, Installation Screws, Parallel Key, Operating Manual

Permissible Torque on Combination Types

● 50 Hz

Unit: Upper Values: N·m/Lower Values: lb·in

Product Name	Speed r/min	300	250	200	166	120	100	83	60	50	41	30	25	20	16.6	15	12.5	10	8.3	6	5
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300
5IK60VEST2-□A, 5IK60VES-□A	1.8	2.2	2.8	3.3	4.6	5.5	6.6	8.8	10.6	12.7	17.6	21.2	26.4	30	30	30	30	30	30	30	30
	15.9	19.4	24	29	40	48	58	77	93	112	155	187	230	260	260	260	260	260	260	260	260

● 60 Hz

Unit: Upper Values: N·m/Lower Values: lb·in

Product Name	Speed r/min	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300
5IK60VEST2-□A, 5IK60VES-□A	1.6	1.9	2.4	2.8	3.9	4.7	5.7	7.5	9.0	10.8	15.1	18.1	22.6	27.1	30	30	30	30	30	30	30
	14.1	16.8	21	24	34	41	50	66	79	95	133	160	200	230	260	260	260	260	260	260	260

- 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 2~10% less, depending on the load.

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

Permissible Radial Load and Permissible Axial Load

→ Page C-17

Permissible Inertia J of Combination Types

→ Page C-19

Dimensions Unit = mm (in.)

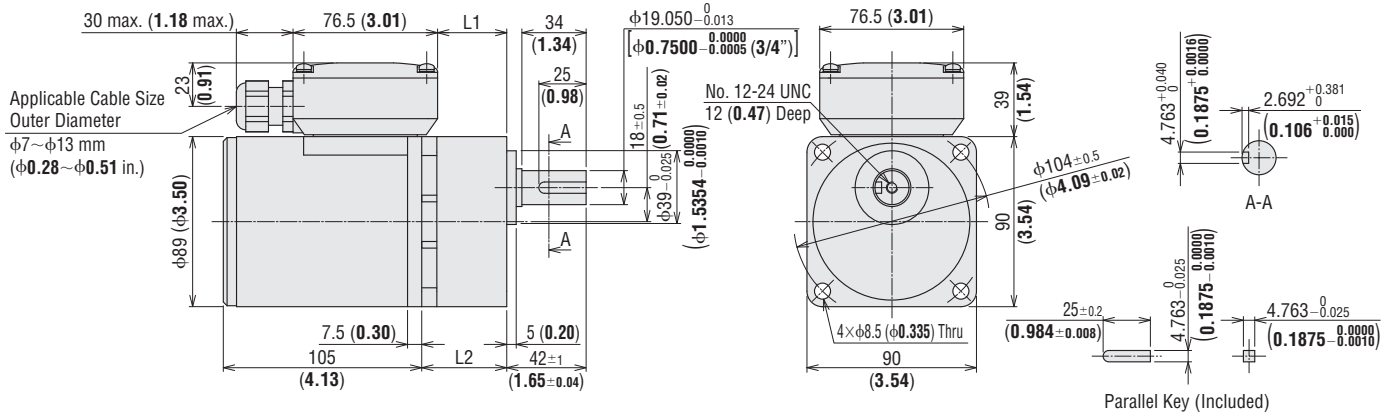
- Installation screws are included with the combination type. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

Combination Type

Terminal Box Type

2D & 3D CAD

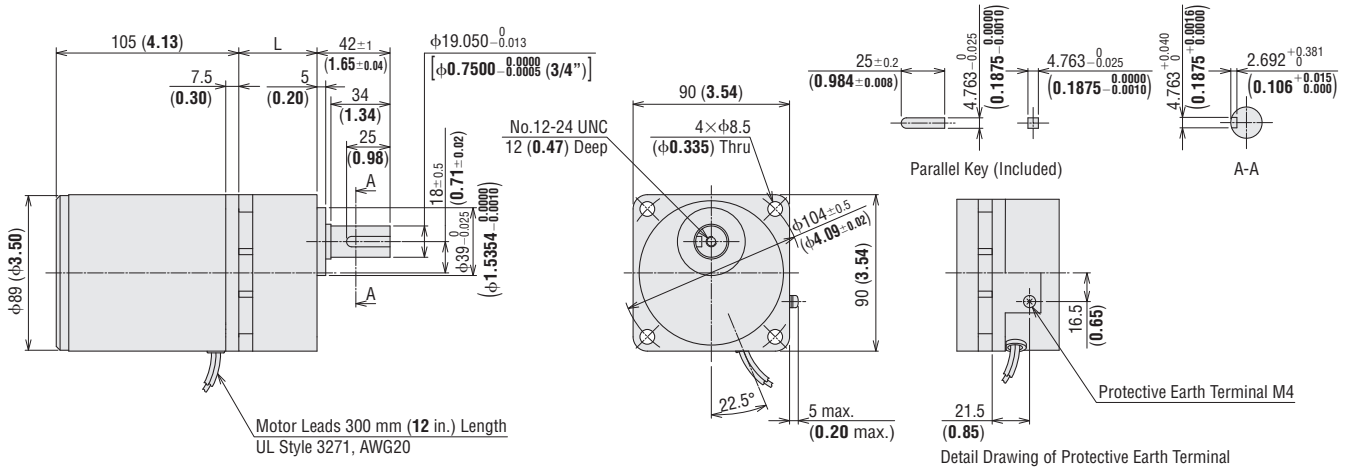
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L1		L2		Mass kg lb.	2D CAD
				mm	in.	mm	in.		
5IK60VEST2-□A	5IK60VGVH-EST2	5GVH□A	5~18	36.6	1.44	45	1.77	4.1 9.0	A1395A
			25~100	49.6	1.95	58	2.28		A1395B
			120~300	55.6	2.19	64	2.52		A1395C



Lead Wire Type

2D & 3D CAD

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK60VES-□A	5IK60VGVH-ES	5GVH□A	5~18	45	1.77	3.8 8.4	A1393A
			25~100	58	2.28		A1393B
			120~300	64	2.52		A1393C



Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

Installation

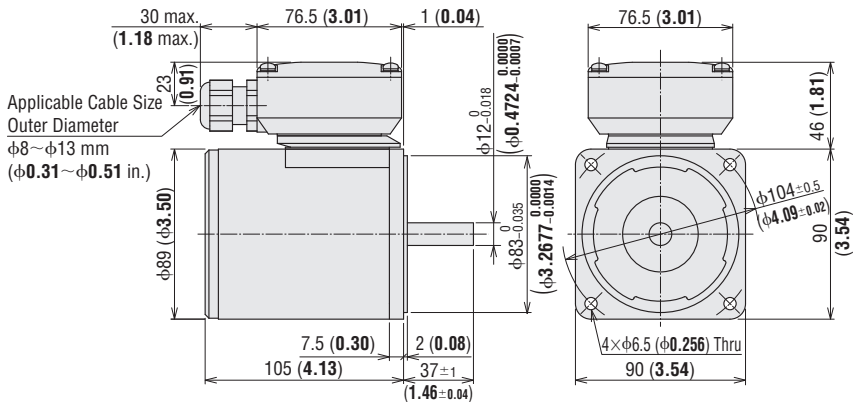
● Round Shaft Type

◇ Terminal Box Type

5IK60VA-EST2

Mass: 2.6 kg (5.7 lb.)

2D CAD A1315 3D CAD

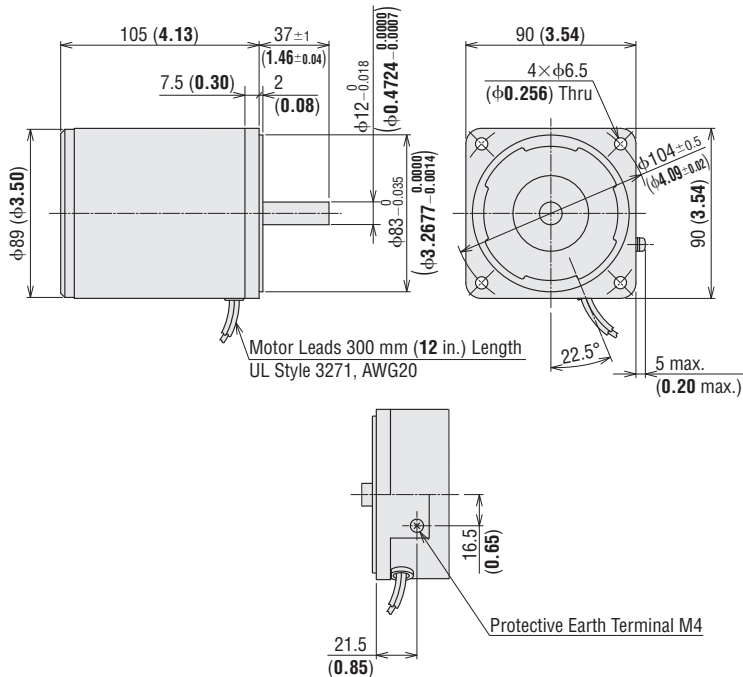


◇ Lead Wire Type

5IK60VA-ES

Mass: 2.3 kg (5.1 lb.)

2D CAD A1226 3D CAD



Detail Drawing of Protective Earth Terminal

Induction Motors
Electromagnetic Brake Motors
High-Efficiency KIIIS Series
60 W (1/12 HP)
100 W (1/8 HP)

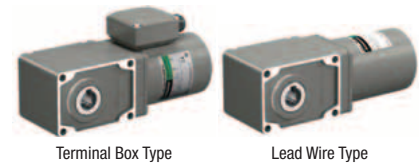
Induction Motors
6 W (1/125 HP)
15 W (1/150 HP)
25 W (1/30 HP)
40 W (1/19 HP)
60 W (1/12 HP)
90 W (1/8 HP)
BH Series 200 W (1/4 HP)
2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

Induction Motors

100 W (1/8 HP)

□90 mm (□3.54 in.)

Right-Angle Geared Type



Terminal Box Type

Lead Wire Type

Overview, Product Series

Constant Speed Induction Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

Specifications – Continuous Rating



Product Name Upper Level: Terminal Box Type Lower Level: Lead Wire Type			Output								Voltage		Frequency		Current		
Hollow Shaft Type	Solid Shaft Type (R shaft)	Solid Shaft Type (L shaft)	W		HP		VAC		Hz		A						
5IK100VEST2-GHR□ 5IK100VES-GHR□	5IK100VEST2-GAR□ 5IK100VES-GAR□	5IK100VEST2-GAL□ 5IK100VES-GAL□	100		1/8		Three-Phase 220		50		0.55						
			100		1/8		Three-Phase 230		60		0.52						
Gear Ratio			7.5	10	15	20	25	30	40	50	60	75	100	120	150	200	240
Speed r/min	50 Hz		200	150	100	75	60	50	37	30	25	20	15	12.5	10	7.5	6.2
	60 Hz		240	180	120	90	72	60	45	36	30	24	18	15	12	9	7.5
Rated Torque Upper Level: N·m Lower Level: lb·in	50 Hz		3.3	4.5	7.0	9.4	11.8	14.3	19.2	24.0	28.9	36.2	48.4	58.2	67.9	70	70
	60 Hz		29	39	61	83	104	126	169	210	250	320	420	510	600	610	610
Starting Torque Upper Level: N·m Lower Level: lb·in	50 Hz		3.0	4.2	6.4	8.7	10.9	13.2	17.7	22.2	26.7	33.4	44.7	53.7	62.7	70	70
	60 Hz		26	37	56	76	96	116	156	196	230	290	390	470	550	610	610
Permissible Load Inertia Upper Level: J×10 ⁻⁴ kg·m ² Lower Level: oz·in ²	50 Hz		4.2	5.7	8.8	11.8	14.8	17.9	24.0	30.0	36.1	45.2	60.4	70	70	70	70
	60 Hz		37	50	77	104	130	158	210	260	310	400	530	610	610	610	610
Instantaneous Stop	50 Hz		3.4	4.6	7.1	9.6	12.0	14.5	19.5	24.4	29.4	36.8	49.2	59.1	69.0	70	70
	60 Hz		30	40	62	84	106	128	172	210	260	320	430	520	610	610	610
Permissible Radial Load Upper Level: N Lower Level: lb	Hollow Shaft*	10 mm (0.39 in.) from Installation Surface	100	190	420	700	1100	1600	2800	4500	6000	8000	12000	17000	25000	25000	25000
		20 mm (0.79 in.) from Installation Surface	550	1040	2300	3800	6000	8800	15300	25000	33000	44000	66000	93000	137000	137000	137000
Permissible Axial Load Upper Level: N Lower Level: lb	Solid Shaft	10 mm (0.39 in.) from End of Output Shaft	61.9	110	248	440	688	990	1760	2750	2750	2750	2750	2750	2750	2750	2750
		20 mm (0.79 in.) from End of Output Shaft	340	600	1360	2400	3800	5400	9600	15000	15000	15000	15000	15000	15000	15000	15000
Permissible Axial Load			350														
Upper Level: N Lower Level: lb.			78														

- *The radial load at each distance can be calculated with a formula. → Page C-16
 - 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 2~10% less, depending on the load.
 - No built-in overheat protection device (thermal protector). When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
 - Use an inverter setting frequency of 80 Hz or less when driving in combination with the inverter.
- Note**
- Do not perform instantaneous bi-directional operations.

Product Line

● Hollow Shaft Type

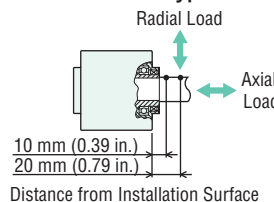
Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VEST2-GHR□	7.5	\$352.00
		10, 15, 20	\$336.00
		25, 30	\$340.00
		40, 50	\$347.00
		60	\$380.00
		75, 100, 120 150, 200, 240	\$407.00 \$475.00
Lead Wire Type	5IK100VES-GHR□	7.5	\$329.00
		10, 15, 20	\$314.00
		25, 30	\$317.00
		40, 50	\$325.00
		60	\$358.00
		75, 100, 120 150, 200, 240	\$385.00 \$453.00

The following items are included with each product.
Geared Motor, Installation Screws, Parallel Key, Safety Cover, Operating Manual

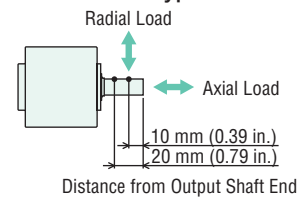
● A number indicating the gear ratio is entered where the box □ is located within the product name.

◇ Load Position

● Hollow Shaft Type



● Solid Shaft Type



● Solid Shaft Type

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VEST2-GAR□ 5IK100VEST2-GAL□	7.5	\$317.00
		10, 15, 20	\$302.00
		25, 30	\$306.00
		40, 50	\$312.00
		60	\$347.00
		75, 100, 120 150, 200, 240	\$374.00 \$440.00
Lead Wire Type	5IK100VES-GAR□ 5IK100VES-GAL□	7.5	\$295.00
		10, 15, 20	\$280.00
		25, 30	\$284.00
		40, 50	\$290.00
		60	\$325.00
		75, 100, 120 150, 200, 240	\$352.00 \$418.00

The following items are included with each product.
Geared Motor, Installation Screws, Parallel Key, Operating Manual

Dimensions Unit = mm (in.)

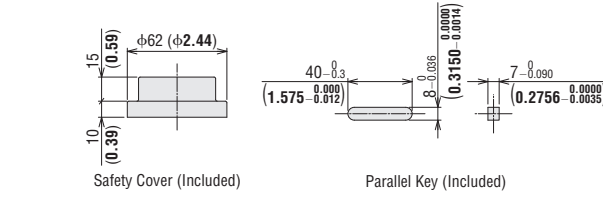
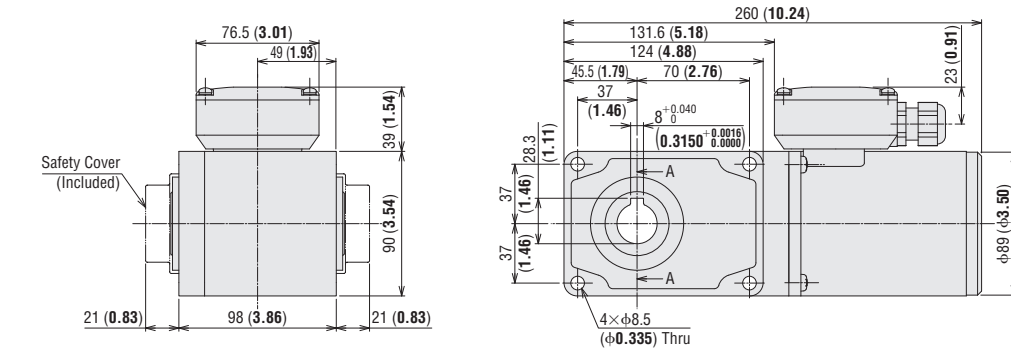
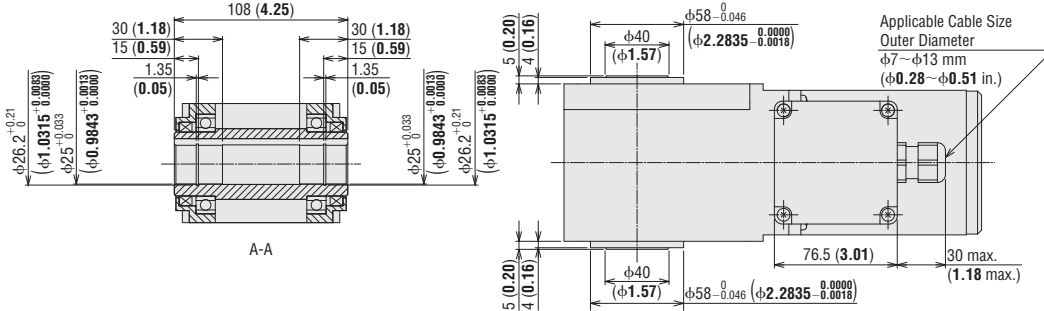
- Installation screws are included. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● **Terminal Box Type**

◇ **Hollow Shaft Type**

5IK100VEST2-GHR □ Mass: 7.1 kg (15.6 lb.)

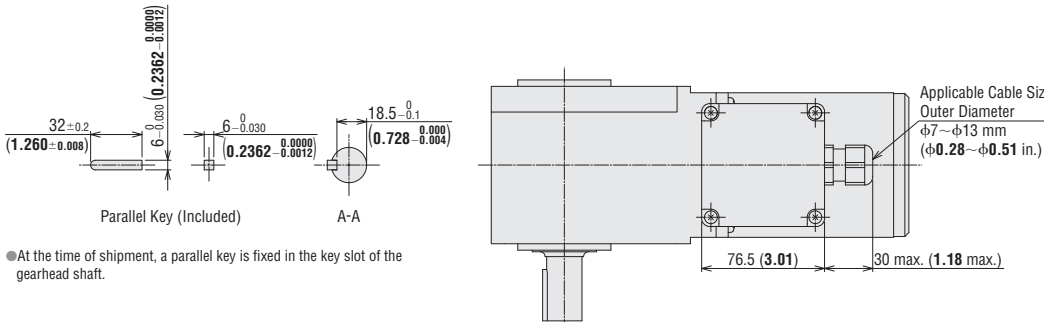
2D CAD A1318 **3D CAD**



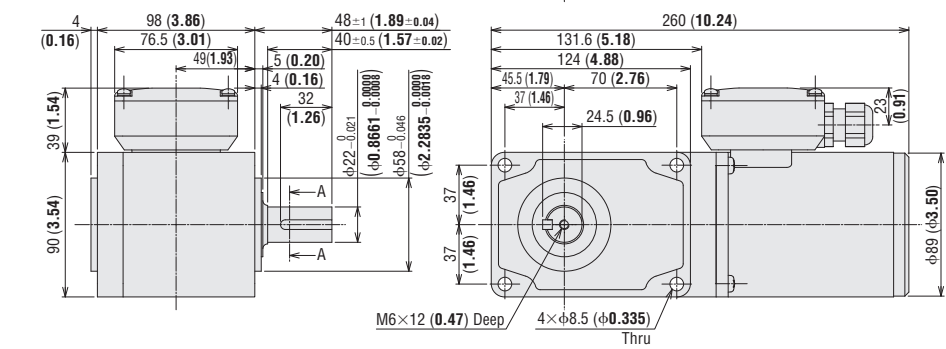
◇ **Solid Shaft Type (R shaft)**

5IK100VEST2-GAR □ Mass: 7.1 kg (15.6 lb.)

2D CAD A1319 **3D CAD**



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



Induction Motors
Electromagnetic Brake Motors
High-Efficiency KII Series
60 W (1/12 HP)
100 W (1/8 HP)

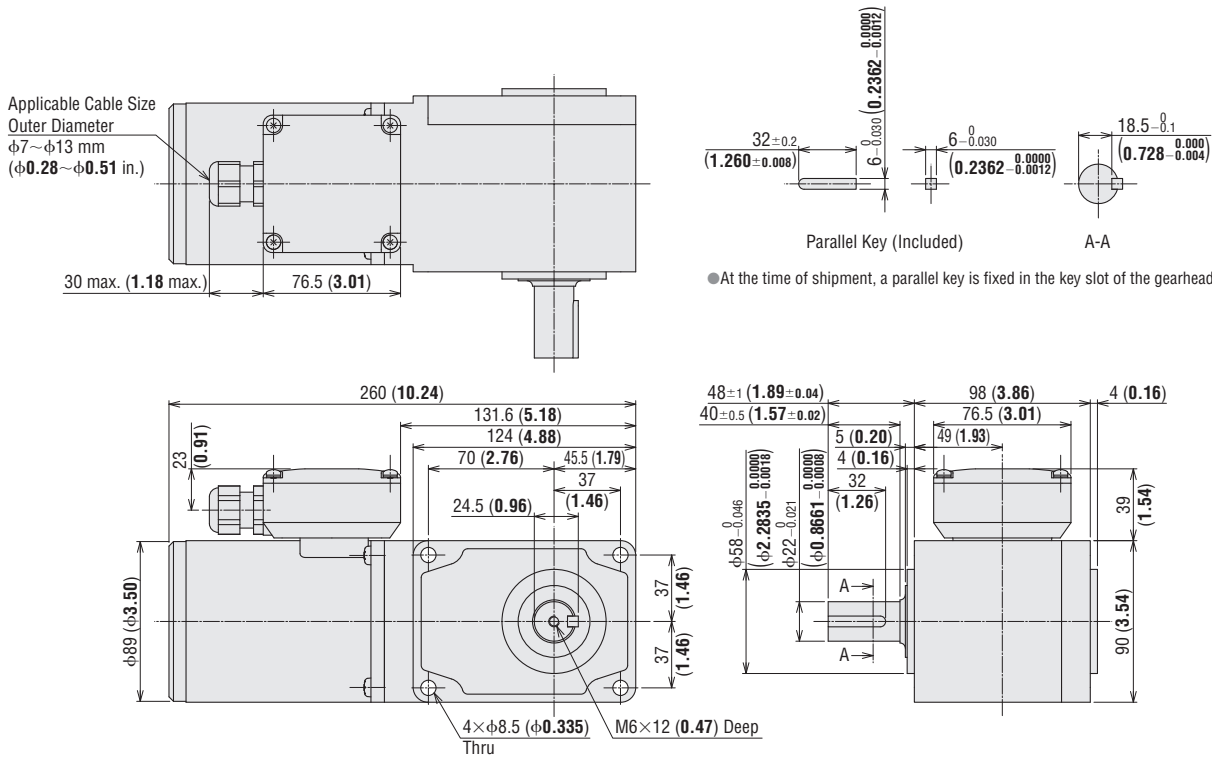
Induction Motors
6 W (1/125 HP)
15 W (1/150 HP)
25 W (1/30 HP)
40 W (1/19 HP)
60 W (1/12 HP)
90 W (1/8 HP)

BH Series
200 W (1/4 HP)
2-Pole, High-Speed
60-150 W (1/12-1/5 HP)

◆ Solid Shaft Type (L shaft)

5IK100VEST2-GAL □ Mass: 7.1 kg (15.6 lb.)

2D CAD A1320 **3D CAD**

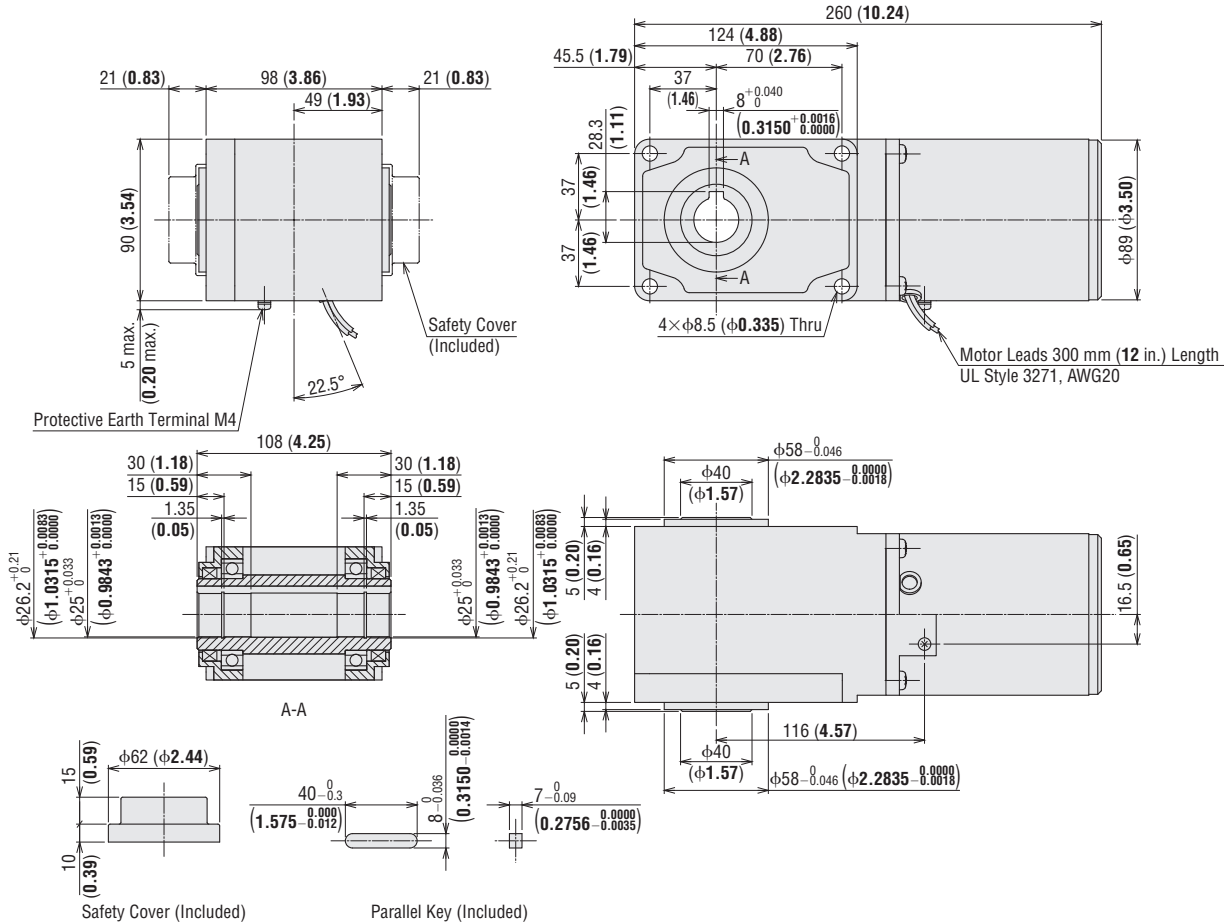


● Lead Wire Type

◆ Hollow Shaft Type

5IK100VES-GHR □ Mass: 6.8 kg (15.0 lb.)

2D CAD A1277 **3D CAD**



Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

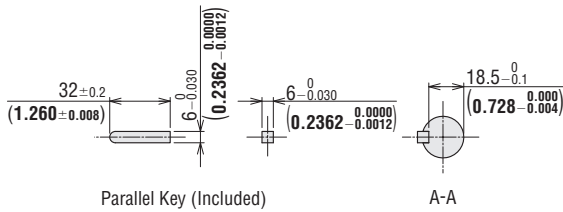
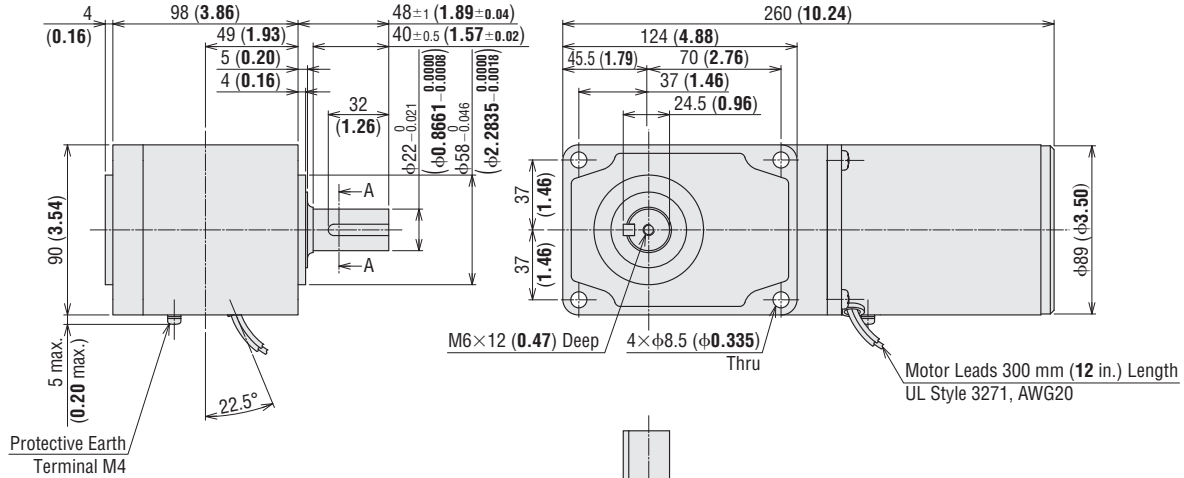
Brake Pack

Accessories

Installation

◇ Solid Shaft Type (R shaft)

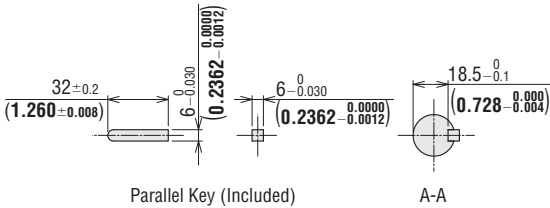
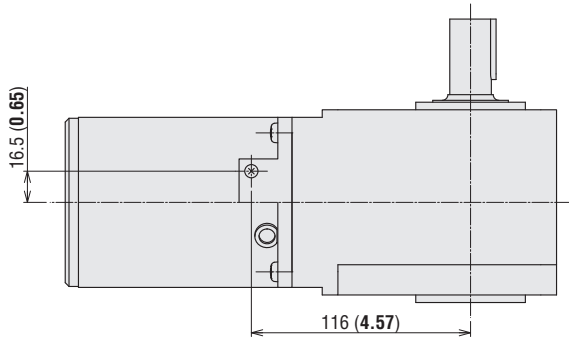
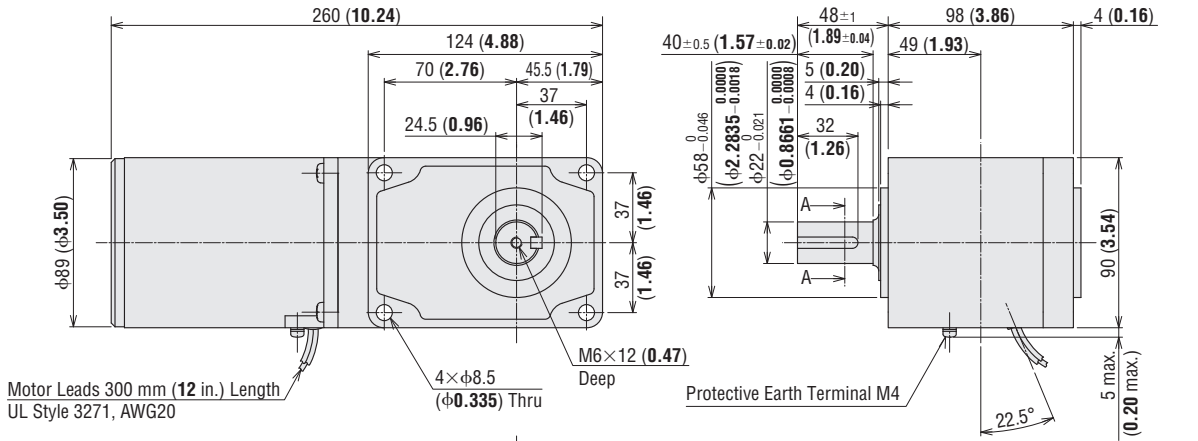
5IK100VES-GAR □ Mass: 6.8 kg (15.0 lb.) 2D CAD A1278 3D CAD



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

◇ Solid Shaft Type (L shaft)

5IK100VES-GAL □ Mass: 6.8 kg (15.0 lb.) 2D CAD A1279 3D CAD



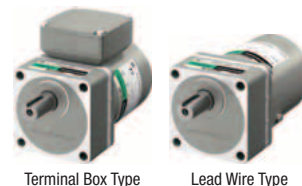
● At the time of shipment, a parallel key is fixed in the key slot of the gearhead shaft.

Induction Motors

100 W (1/8 HP)

□90 mm (□3.54 in.)

Parallel Shaft Combination Type/Round Shaft Type



Terminal Box Type

Lead Wire Type

Overview, Product Series

Constant Speed Induction Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

Specifications – Continuous Rating



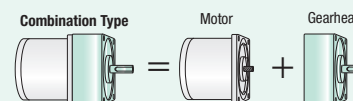
Product Name Upper Level: Combination Type Lower Level: Round Shaft Type		Output		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed
Terminal Box Type	Lead Wire Type	W	HP	VAC	Hz	A	mN·m	oz-in	mN·m	oz-in	r/min
5IK100VEST2-□A 5IK100VA-EST2	5IK100VES-□A 5IK100VA-ES	100	1/8	Three-Phase 220	50	0.55	850	120	690	97	1400
					60	0.48	700	99	570	80	1680
		100	1/8	Three-Phase 230	50	0.57	850	120	690	97	1400
					60	0.48	700	99	570	80	1680

- The values in the table are characteristics for the motor only.
- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
- Use an inverter setting frequency of 120 Hz or less when driving in combination with the inverter.

Product Line

Combination Type

Motor and gearhead are delivered pre-assembled. The combination of motors and gearheads can be changed and they are also available separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.



Combination Type with Parallel Shaft

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VEST2-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$269.00
		25, 30, 36, 50, 60	\$289.00
		75, 90, 100, 120, 150, 180	\$299.00
Lead Wire Type	5IK100VES-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$248.00
		25, 30, 36, 50, 60	\$268.00
		75, 90, 100, 120, 150, 180	\$278.00

The following items are included with each product.
Motor, Gearhead, Installation Screws, Parallel Key, Operating Manual

Round Shaft Type

Type	Product Name	List Price
Terminal Box Type	5IK100VA-EST2	\$156.00
Lead Wire Type	5IK100VA-ES	\$135.00

The following items are included with each product.
Motor, Operating Manual

Permissible Torque on Combination Types

50 Hz

Unit: Upper Values: N·m/Lower Values: lb-in

Product Name	Speed r/min	300	250	200	166	120	100	83	60	50	41	30	25	20	16.6	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
5IK100VEST2-□A, 5IK100VES-□A	3.1	3.7	4.7	5.6	7.8	9.3	10.7	14.8	17.8	21.4	29.7	35.6	40	40	40	40	40	40	40
	27	32	41	49	69	82	94	130	157	189	260	310	350	350	350	350	350	350	350

60 Hz

Unit: Upper Values: N·m/Lower Values: lb-in

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
5IK100VEST2-□A, 5IK100VES-□A	2.6	3.1	3.8	4.6	6.4	7.7	8.8	12.3	14.7	17.6	24.5	29.4	34.6	40	40	40	40	40	40
	23	27	33	40	56	68	77	108	130	155	210	260	300	350	350	350	350	350	350

- 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 2~10% less, depending on the load.

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

Permissible Radial Load and Permissible Axial Load

→ Page C-17

Permissible Inertia J of Combination Types

→ Page C-19

Dimensions Unit = mm (in.)

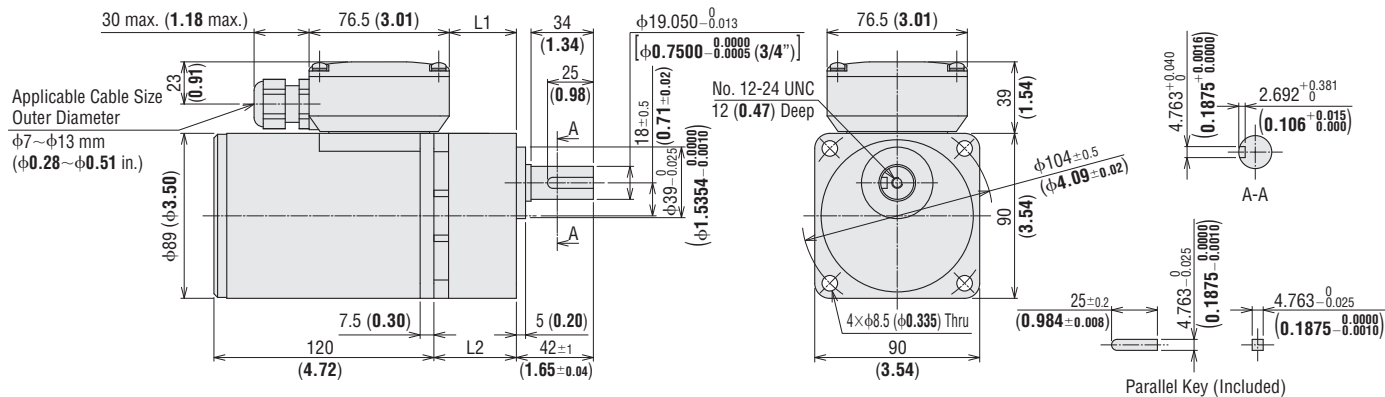
- Installation screws are included with the combination type. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

Combination Type

Terminal Box Type

2D & 3D CAD

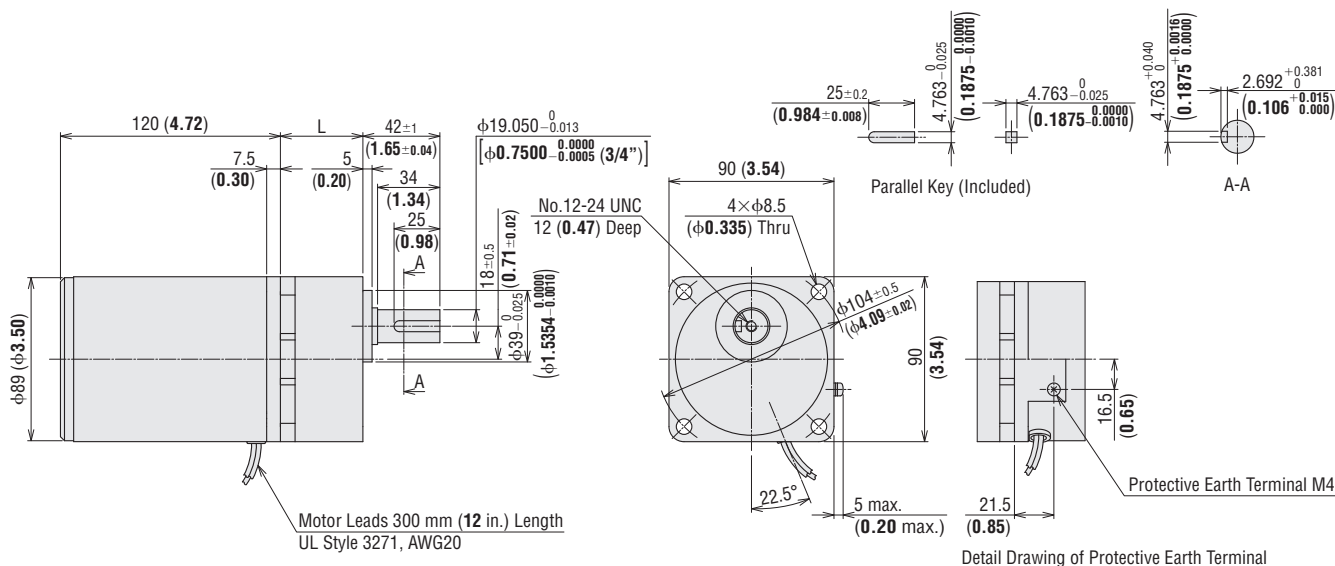
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L1		L2		Mass kg lb.	2D CAD
				mm	in.	mm	in.		
5IK100VEST2-□A	5IK100VGVR-EST2	5GVR□A	5~15	36.6	1.44	45	1.77	4.7 10.3	A1396A
			18~36	49.6	1.95	58	2.28		A1396B
			50~180	61.6	2.43	70	2.76		A1396C



Lead Wire Type

2D & 3D CAD

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK100VES-□A	5IK100VGVR-ES	5GVR□A	5~15	45	1.77	4.4 9.7	A1394A
			18~36	58	2.28		A1394B
			50~180	70	2.76		A1394C



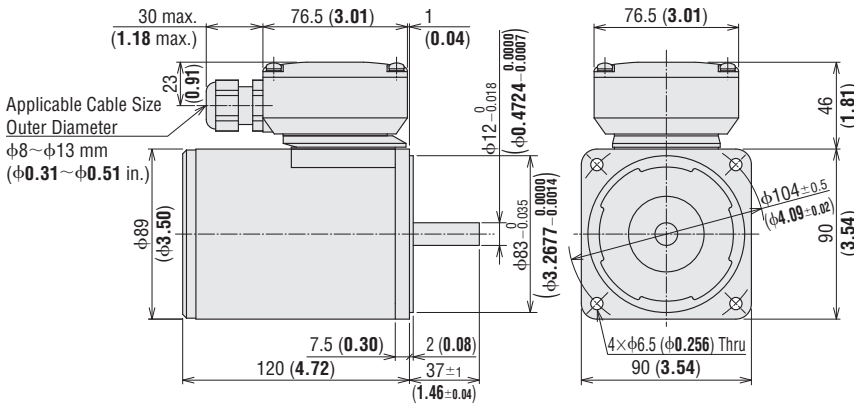
● Round Shaft Type

◇ Terminal Box Type

5IK100VA-EST2

Mass: 3.2 kg (7.0 lb.)

2D CAD A1317 3D CAD

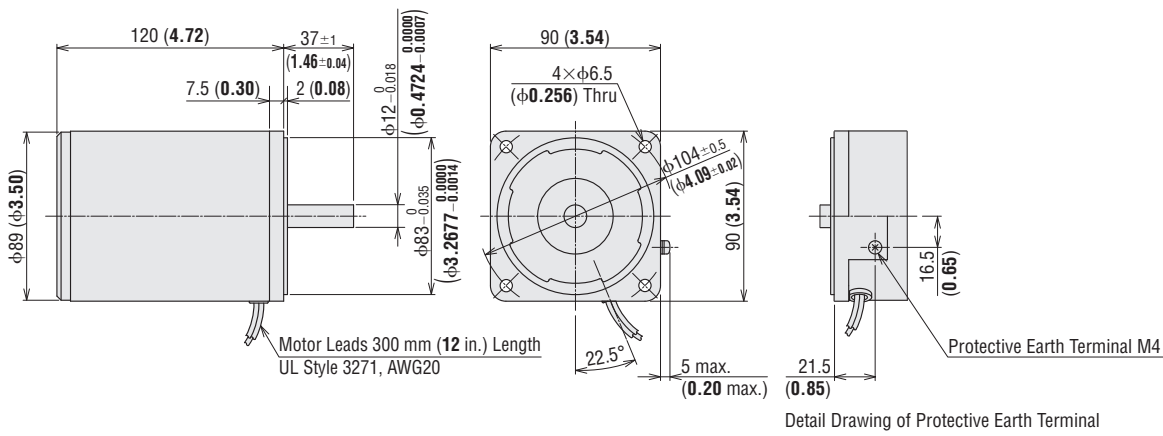


◇ Lead Wire Type

5IK100VA-ES

Mass: 2.9 kg (6.4 lb.)

2D CAD A1228 3D CAD



Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

Installation

Electromagnetic Brake Type Motors

60 W (1/12 HP)

□90 mm (□3.54 in.)

Parallel Shaft Combination Type/Round Shaft Type



Terminal Box Type

Cable Type

Induction Motors

Electromagnetic Brake Motors

High-Efficiency KIIS Series

60 W (1/12 HP)

100 W (1/8 HP)

Induction Motors

6 W (1/125 HP)

15 W (1/150 HP)

25 W (1/30 HP)

40 W (1/19 HP)

60 W (1/12 HP)

90 W (1/8 HP)

BH Series 200 W (1/4 HP)

2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

Specifications – Continuous Rating



Product Name Upper Level: Combination Type Lower Level: Round Shaft Type		Output		Voltage VAC	Frequency Hz	Current A	Starting Torque		Rated Torque		Rated Speed r/min
Terminal Box Type	Cable Type	W	HP				mN·m	oz-in	mN·m	oz-in	
5IK60VESMT2-□A 5IK60VA-ESMT2	5IK60VESM-□A 5IK60VA-ESM	60	1/12	Three-Phase 220	50	0.37	600	85	410	58	1400
					60	0.33	500	71	350	49	1670
		60	1/12	Three-Phase 230	50	0.38	600	85	410	58	1400
					60	0.33	500	71	350	49	1670

- The values in the table are characteristics for the motor only.
- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
- Use an inverter setting frequency of 120 Hz or less when driving in combination with the inverter.

● Electromagnetic Brake (Power off activated type)

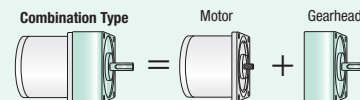
Product Name		Voltage VAC	Frequency Hz	Current A	Input W	Static Friction Torque	
Terminal Box Type	Cable Type					mN·m	oz-in
5IK60VESMT2-□A 5IK60VA-ESMT2	5IK60VESM-□A 5IK60VA-ESM	Single-Phase 220	50	0.04	6	500	71
			60				
		Single-Phase 230	50	0.04	6	500	71
			60				

- The values in the table are characteristics for the motor only.

Product Line

Combination Type

Motor and gearhead are delivered pre-assembled. The combination of motors and gearheads can be changed and they are also available separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.



● Combination Type with Parallel Shaft

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK60VESMT2-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$384.00
		25, 30, 36, 50, 60, 75, 90, 100	\$395.00
		120, 150, 180	\$405.00
		250, 300	\$439.00
Cable Type	5IK60VESM-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$362.00
		25, 30, 36, 50, 60, 75, 90, 100	\$373.00
		120, 150, 180	\$383.00
		250, 300	\$417.00

The following items are included with each product.
Motor, Gearhead, Installation Screws, Parallel Key, Operating Manual

● Round Shaft Type

Type	Product Name	List Price
Terminal Box Type	5IK60VA-ESMT2	\$272.00
Cable Type	5IK60VA-ESM	\$250.00

The following items are included with each product.
Motor, Operating Manual

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

Permissible Torque on Combination Types

50 Hz

Unit: Upper Values: N-m/Lower Values: lb-in

Product Name	Speed r/min	300	250	200	166	120	100	83	60	50	41	30	25	20	16.6	15	12.5	10	8.3	6	5
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300
5IK60VESMT2-□A		1.8	2.2	2.8	3.3	4.6	5.5	6.6	8.8	10.6	12.7	17.6	21.2	26.4	30	30	30	30	30	30	30
5IK60VESM-□A		15.9	19.4	24	29	40	48	58	77	93	112	155	187	230	260	260	260	260	260	260	260

60 Hz

Unit: Upper Values: N-m/Lower Values: lb-in

Product Name	Speed r/min	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300
5IK60VESMT2-□A		1.6	1.9	2.4	2.8	3.9	4.7	5.7	7.5	9.0	10.8	15.1	18.1	22.6	27.1	30	30	30	30	30	30
5IK60VESM-□A		14.1	16.8	21	24	34	41	50	66	79	95	133	160	200	230	260	260	260	260	260	260

- 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 2~10% less, depending on the load.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

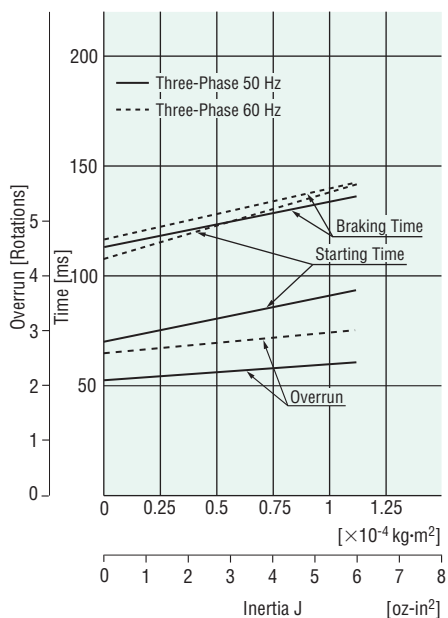
Permissible Radial Load and Permissible Axial Load

→ Page C-17

Permissible Inertia J of Combination Types

→ Page C-19

Starting and Braking Characteristics (Reference values - motor only)



Overview, Product Series

Constant Speed Induction Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

Dimensions Unit = mm (in.)

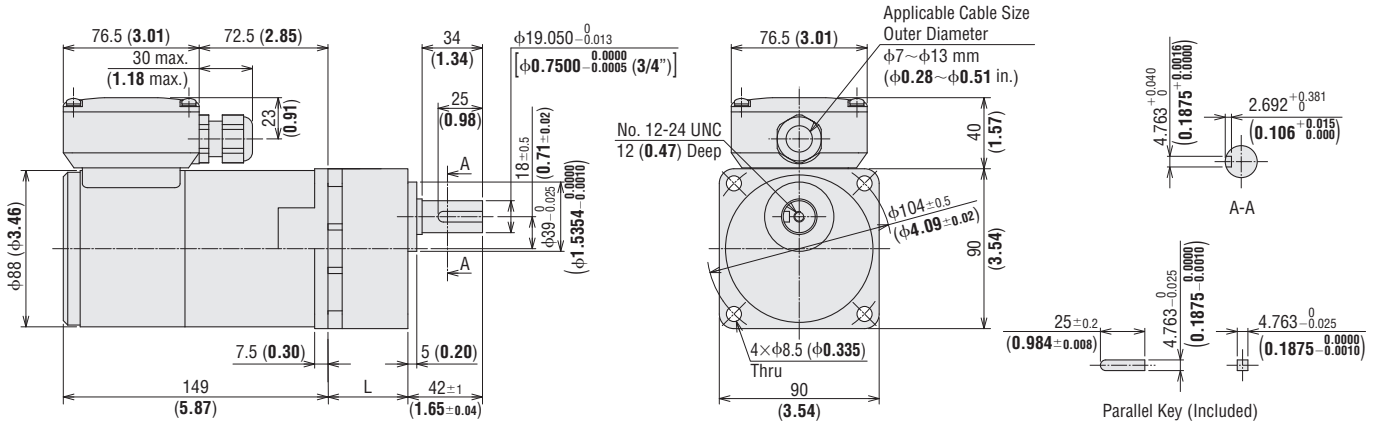
- Installation screws are included with the combination type. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions, and the cable type cable outlet in 2 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● **Combination Type**

◇ **Terminal Box Type**

2D & 3D CAD

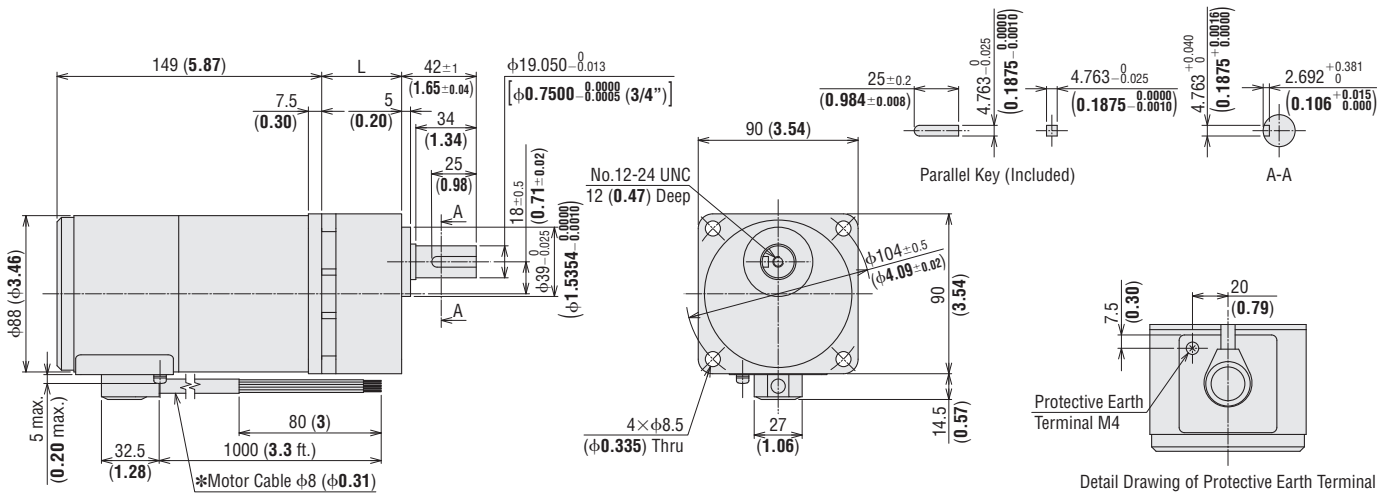
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK60VESMT2-□A	5IK60GVGH-ESMT2	5GVH□A	5~18	45	1.77	4.8	A1399A
			25~100	58	2.28		10.6
			120~300	64	2.52		A1399C



◇ **Cable Type**

2D & 3D CAD

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK60VESM-□A	5IK60GVGH-ESM	5GVH□A	5~18	45	1.77	4.5	A1397A
			25~100	58	2.28		9.9
			120~300	64	2.52		A1397C



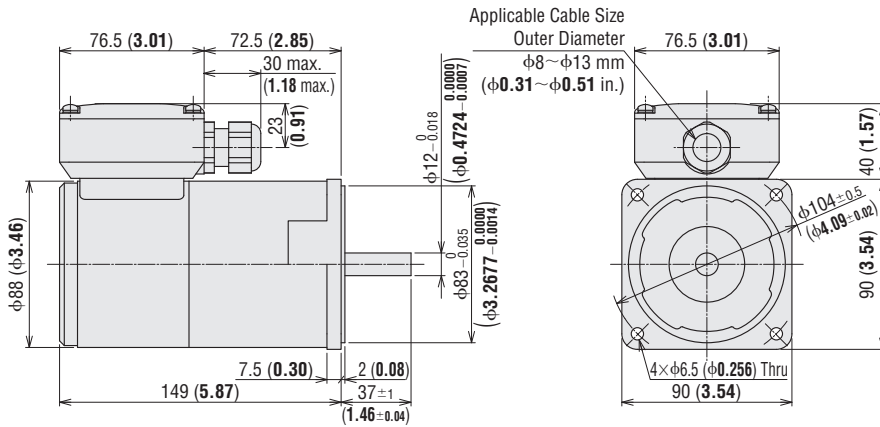
*Motor Cable Cores
 3 Motor Leads, UL Style 3271, AWG20
 2 Magnetic Brake Leads, UL Style 3266, AWG22

● Round Shaft Type

◇ Terminal Box Type

5IK60VA-ESMT2 Mass: 3.3 kg (7.3 lb.)

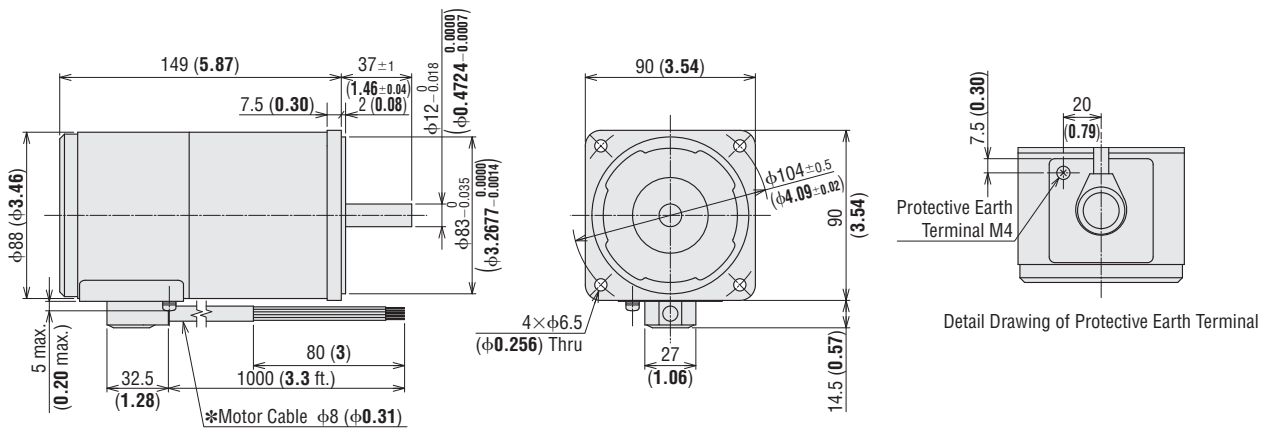
2D CAD A1322 **3D CAD**



◇ Cable Type

5IK60VA-ESM Mass: 3.0 kg (6.6 lb.)

2D CAD A1283 **3D CAD**



Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

Installation

Electromagnetic Brake Type Motors

100 W (1/8 HP)

□90 mm (□3.54 in.)

Right-Angle Geared Type



Terminal Box Type

Cable Type

Induction Motors

Electromagnetic Brake Motors

High-Efficiency KIIS Series

60 W (1/12 HP)

100 W (1/8 HP)

Induction Motors

6 W (1/125 HP)

15 W (1/150 HP)

25 W (1/30 HP)

40 W (1/19 HP)

60 W (1/12 HP)

90 W (1/8 HP)

BH Series 200 W (1/4 HP)

2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

Specifications – Continuous Rating



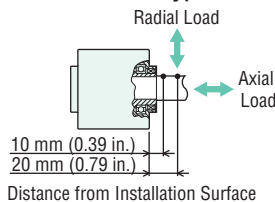
Product Name			Motor				Electromagnetic Brake (Power off activated type)						
Upper Level: Terminal Box Type Lower Level: Cable Type			Output		Voltage	Frequency	Current	Voltage	Frequency	Current	Input	Static Friction Torque	
Hollow Shaft Type	Solid Shaft Type (R shaft)	Solid Shaft Type (L shaft)	W	HP	VAC	Hz	A	VAC	Hz	A	W	mN·m	oz·in
5IK100VESMT2-GHR□ 5IK100VESM-GHR□	5IK100VESMT2-GAR□ 5IK100VESM-GAR□	5IK100VESMT2-GAL□ 5IK100VESM-GAL□	100	1/8	Three-Phase 220	50	0.55	Single-Phase 220	50	0.04	6	500	71
						60	0.52		60				
5IK100VESMT2-GHR□ 5IK100VESM-GHR□	5IK100VESMT2-GAR□ 5IK100VESM-GAR□	5IK100VESMT2-GAL□ 5IK100VESM-GAL□	100	1/8	Three-Phase 230	50	0.57	Single-Phase 230	50	0.04	6	500	71
						60	0.52		60				

Gear Ratio		7.5	10	15	20	25	30	40	50	60	75	100	120	150	200	240
Speed r/min	50 Hz	200	150	100	75	60	50	37	30	25	20	15	12.5	10	7.5	6.2
	60 Hz	240	180	120	90	72	60	45	36	30	24	18	15	12	9	7.5
Rated Torque Upper Level: N·m Lower Level: lb-in	50 Hz	3.3 29	4.5 39	7.0 61	9.4 83	11.8 104	14.3 126	19.2 169	24.0 210	28.9 250	36.2 320	48.4 420	58.2 510	67.9 600	70 610	70 610
	60 Hz	3.0 26	4.2 37	6.4 56	8.7 76	10.9 96	13.2 116	17.7 156	22.2 196	26.7 230	33.4 290	44.7 390	53.7 470	62.7 550	70 610	70 610
Starting Torque Upper Level: N·m Lower Level: lb-in	50 Hz	4.2 37	5.7 50	8.8 77	11.8 104	14.8 130	17.9 158	24.0 210	30.0 260	36.1 310	45.2 400	60.4 530	70 610	70 610	70 610	70 610
	60 Hz	3.4 30	4.6 40	7.1 62	9.6 84	12.0 106	14.5 128	19.5 172	24.4 210	29.4 260	36.8 320	49.2 430	59.1 520	69.0 610	70 610	70 610
Permissible Load Inertia Upper Level: J × 10 ⁻⁴ kg·m ² Lower Level: oz·in ²	Instantaneous Stop	100	190	420	700	1100	1600	2800	4500	6000	8000	12000	17000	25000	25000	25000
		550	1040	2300	3800	6000	8800	15300	25000	33000	44000	66000	93000	137000	137000	137000
		61.9	110	248	440	688	990	1760	2750	2750	2750	2750	2750	2750	2750	2750
Permissible Radial Load Upper Level: N Lower Level: lb.	Hollow Shaft*	10 mm (0.39 in.) from Installation Surface							2200							
		20 mm (0.79 in.) from Installation Surface							490							
	Solid Shaft	10 mm (0.39 in.) from End of Output Shaft							1700							
		20 mm (0.79 in.) from End of Output Shaft							1850							
Permissible Axial Load Upper Level: N Lower Level: lb.								350								
								78								

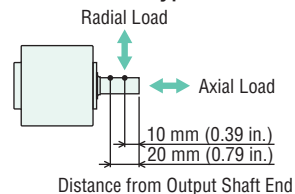
- *The radial load at each distance can be calculated with a formula. → Page C-16
 - The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2~10% less, depending on the load.
 - No built-in overheat protection device (thermal protector). When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
 - Use an inverter setting frequency of 80 Hz or less when driving in combination with the inverter.
- Note**
- Do not perform instantaneous bi-directional operations.

◇ Load Position

● Hollow Shaft Type



● Solid Shaft Type



Starting and Braking Characteristics (Reference values)

→ Page C-52

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

Product Line

Hollow Shaft Type

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VESMT2-GHR <input type="checkbox"/>	7.5	\$484.00
		10, 15, 20	\$468.00
		25, 30	\$472.00
		40, 50	\$479.00
		60	\$512.00
		75, 100, 120	\$539.00
		150, 200, 240	\$607.00
Cable Type	5IK100VESM-GHR <input type="checkbox"/>	7.5	\$461.00
		10, 15, 20	\$446.00
		25, 30	\$449.00
		40, 50	\$457.00
		60	\$490.00
		75, 100, 120	\$517.00
		150, 200, 240	\$585.00

The following items are included with each product.

Geared Motor, Installation Screws, Parallel Key, Safety Cover, Operating Manual

Solid Shaft Type

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VESMT2-GAR <input type="checkbox"/> 5IK100VESMT2-GAL <input type="checkbox"/>	7.5	\$449.00
		10, 15, 20	\$434.00
		25, 30	\$438.00
		40, 50	\$444.00
		60	\$479.00
		75, 100, 120	\$506.00
		150, 200, 240	\$572.00
Cable Type	5IK100VESM-GAR <input type="checkbox"/> 5IK100VESM-GAL <input type="checkbox"/>	7.5	\$427.00
		10, 15, 20	\$412.00
		25, 30	\$416.00
		40, 50	\$422.00
		60	\$457.00
		75, 100, 120	\$484.00
		150, 200, 240	\$550.00

The following items are included with each product.

Geared Motor, Installation Screws, Parallel Key, Operating Manual

Overview, Product Series

Constant Speed Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

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

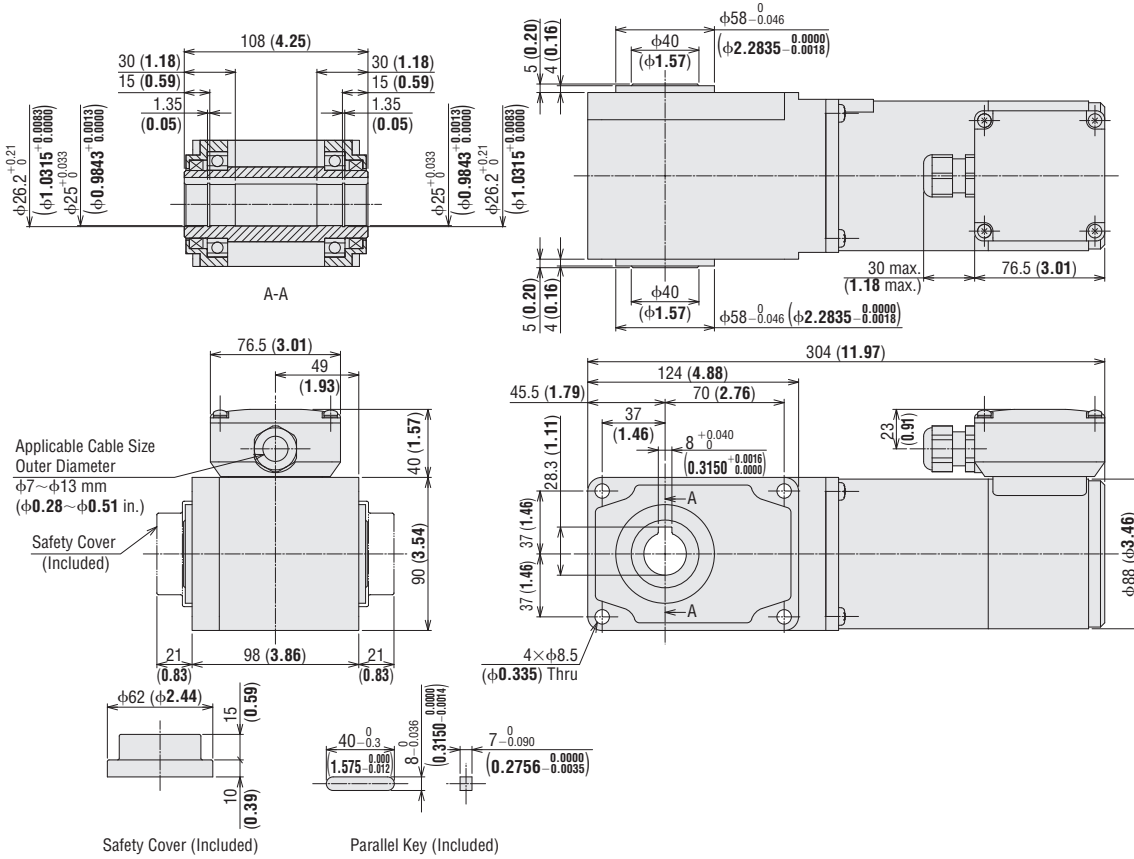
Dimensions Unit = mm (in.)

- Installation screws are included. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions, and the cable type cable outlet in 2 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● **Terminal Box Type**

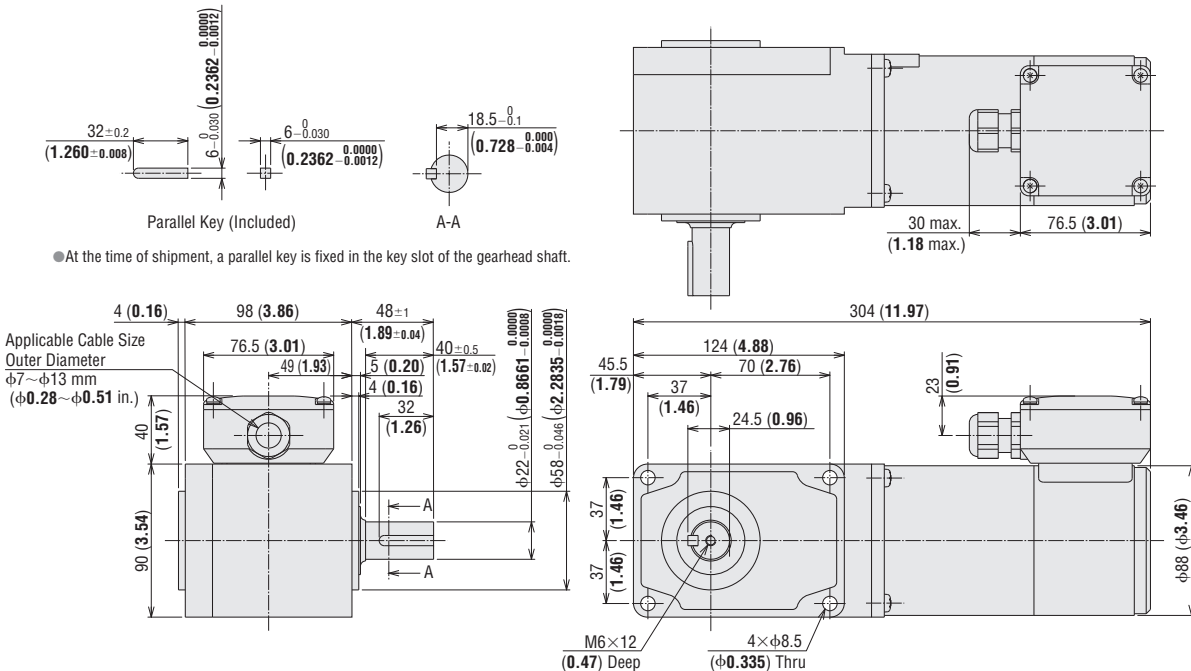
◇ **Hollow Shaft Type**

5IK100VESMT2-GHR □ Mass: 7.7 kg (16.9 lb.) **2D CAD** A1325 **3D CAD**



◇ **Solid Shaft Type (R shaft)**

5IK100VESMT2-GAR □ Mass: 7.7 kg (16.9 lb.) **2D CAD** A1326 **3D CAD**



● At the time of shipment, a parallel key is fixed in the key slot of the gearhead.

Induction Motors

Electromagnetic Brake Motors

High-Efficiency KII Series

60 W (1/12 HP)

100 W (1/8 HP)

Induction Motors

6 W (1/125 HP)

15 W (1/150 HP)

25 W (1/30 HP)

40 W (1/19 HP)

60 W (1/12 HP)

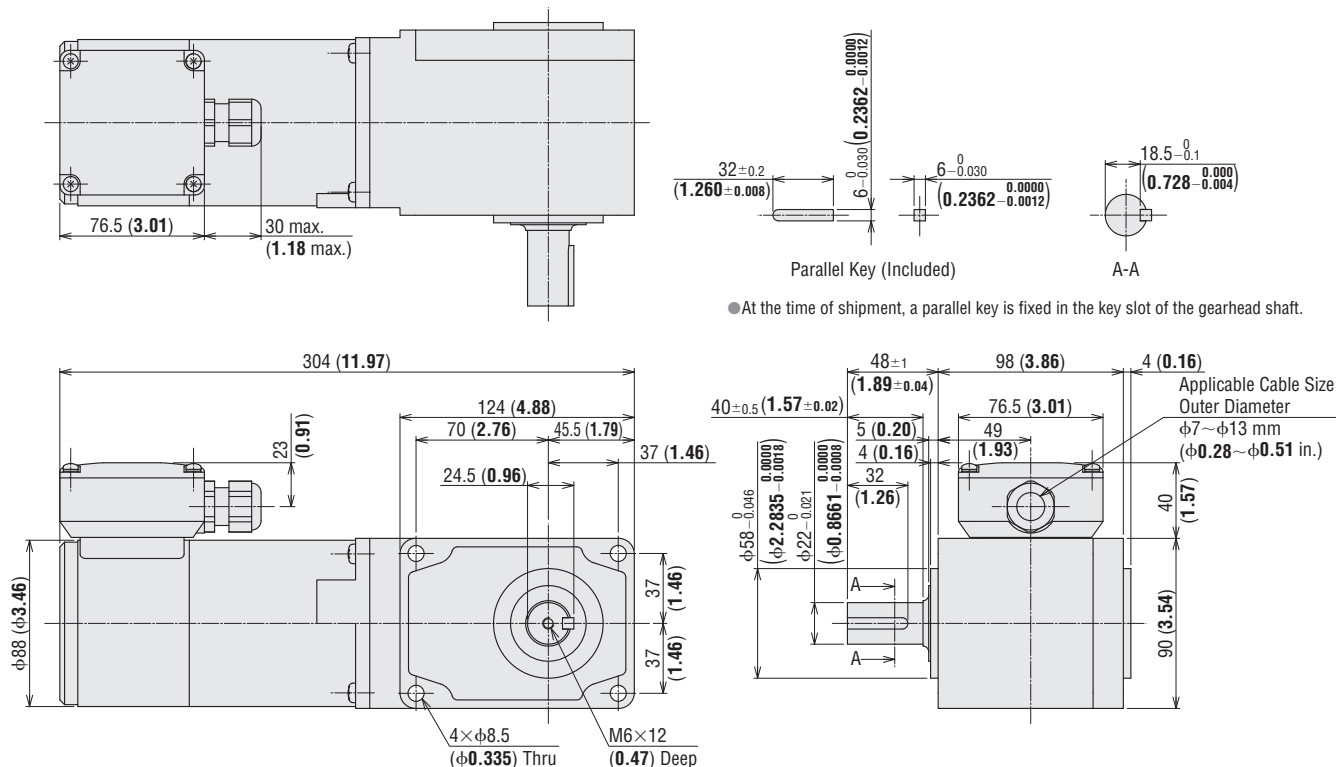
90 W (1/8 HP)

BH Series 200 W (1/4 HP)

2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

◆ Solid Shaft Type (L shaft)

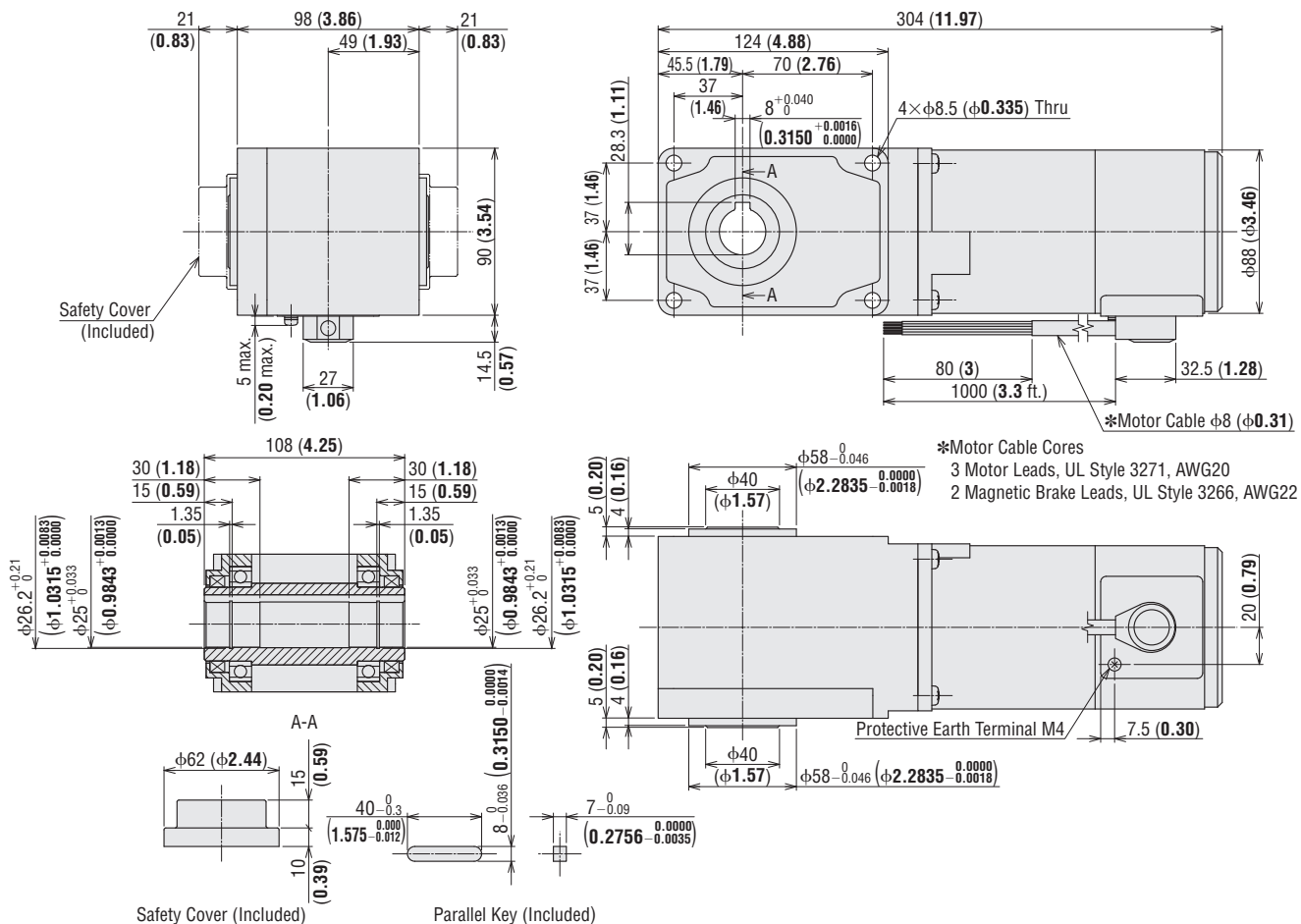
5IK100VESMT2-GAL □ Mass: 7.7 kg (16.9 lb.) 2D CAD A1327 3D CAD



● Cable Type

◆ Hollow Shaft Type

5IK100VESM-GHR □ Mass: 7.5 kg (16.5 lb.) 2D CAD A1291 3D CAD



Overview, Product Series

Constant Speed Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

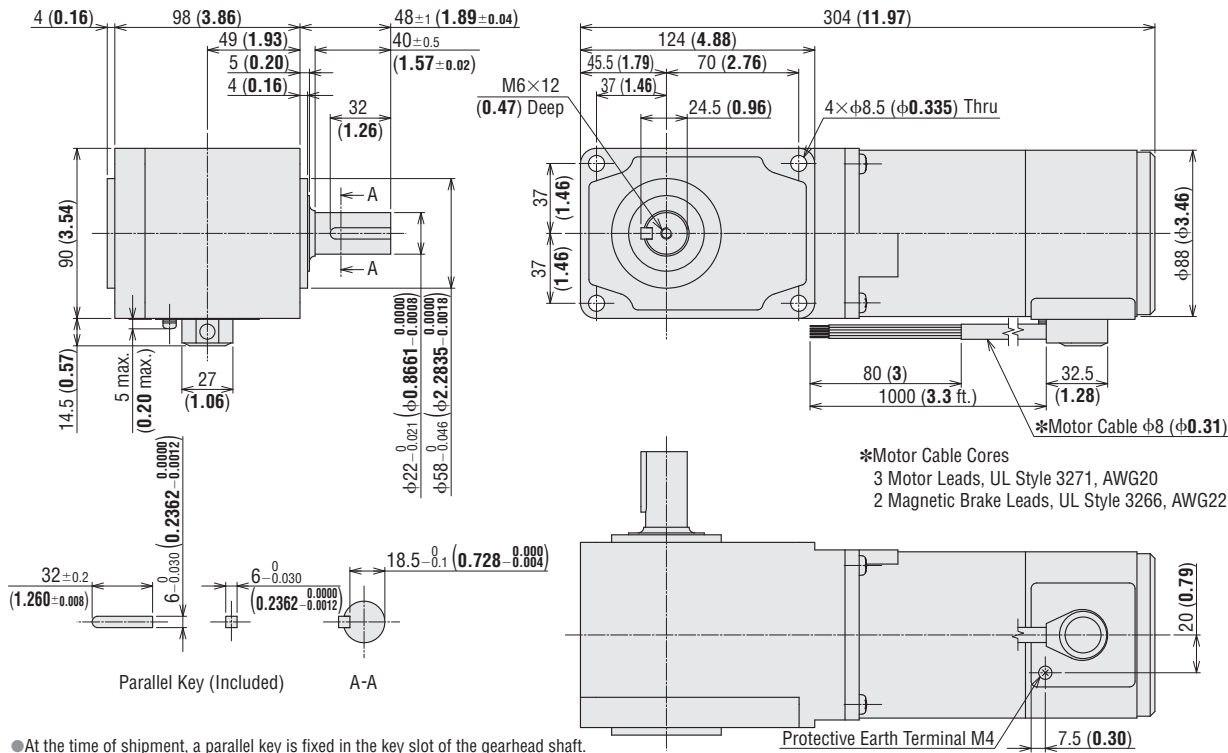
Brake Pack

Accessories

Installation

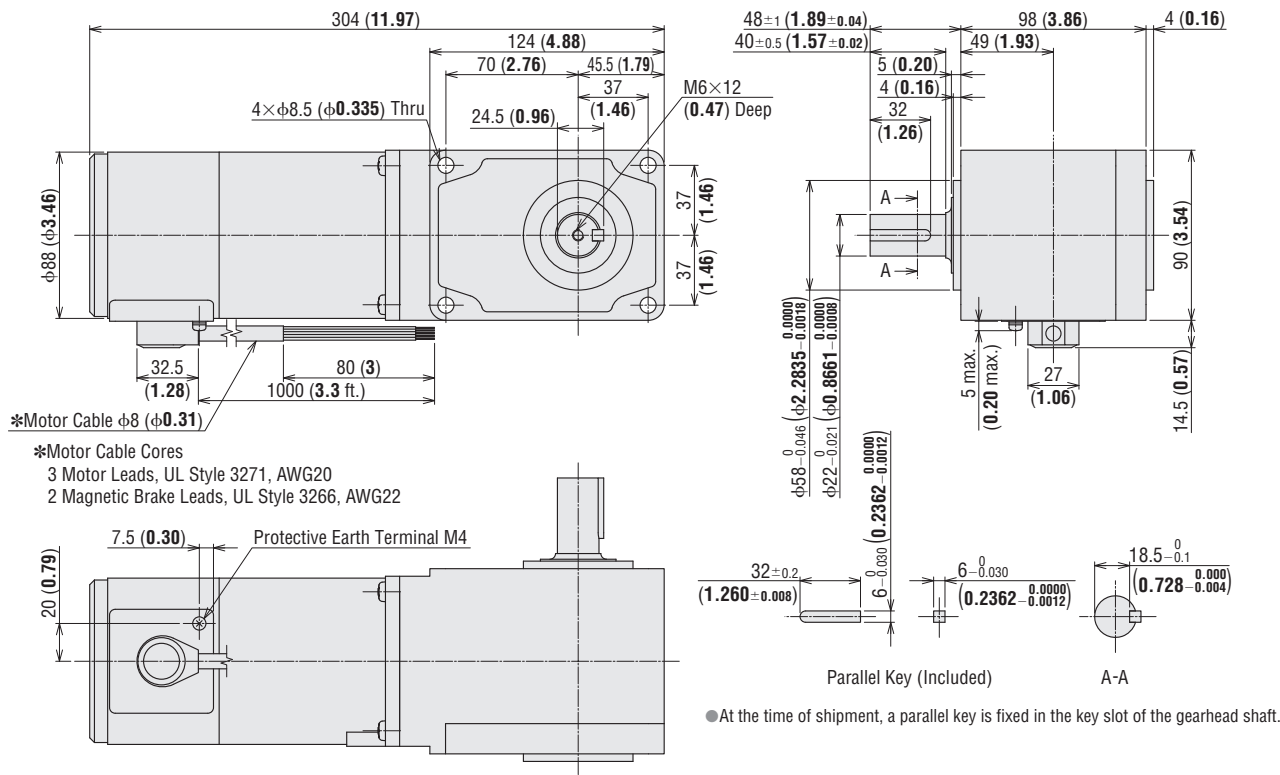
◇ Solid Shaft Type (R shaft)

5IK100VESM-GAR □ Mass: 7.5 kg (16.5 lb.) **2D CAD** A1292 **3D CAD**



◇ Solid Shaft Type (L shaft)

5IK100VESM-GAL □ Mass: 7.5 kg (16.5 lb.) **2D CAD** A1293 **3D CAD**



Electromagnetic Brake Type Motors

100 W (1/8 HP)

□90 mm (□3.54 in.)

Parallel Shaft Combination Type/Round Shaft Type



Terminal Box Type

Cable Type

Overview, Product Series

Constant Speed Motors

Three-Phase Induction Motors

Single-Phase Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

Specifications – Continuous Rating



Product Name Upper Level: Combination Type Lower Level: Round Shaft Type		Output		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed
Terminal Box Type	Cable Type	W	HP	VAC	Hz	A	mN-m	oz-in	mN-m	oz-in	r/min
5IK100VESMT2-□A 5IK100VA-ESMT2	5IK100VESM-□A 5IK100VA-ESM	100	1/8	Three-Phase 220	50	0.55	850	120	690	97	1400
					60	0.48	700	99	570	80	1680
		100	1/8	Three-Phase 230	50	0.57	850	120	690	97	1400
					60	0.48	700	99	570	80	1680

- The values in the table are characteristics for the motor only.
- No built-in overheat protection device (thermal protector).
When there is an overload or the output shaft is locked, use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
- Use an inverter setting frequency of 120 Hz or less when driving in combination with the inverter.

● Electromagnetic Brake (Power off activated type)

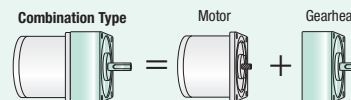
Product Name		Voltage	Frequency	Current	Input	Static Friction Torque	
Terminal Box Type	Cable Type	VAC	Hz	A	W	mN-m	oz-in
5IK100VESMT2-□A 5IK100VA-ESMT2	5IK100VESM-□A 5IK100VA-ESM	Single-Phase 220	50	0.04	6	500	71
			60				
		Single-Phase 230	50	0.04	6	500	71
			60				

- The values in the table are characteristics for the motor only.

Product Line

Combination Type

Motor and gearhead are delivered pre-assembled. The combination of motors and gearheads can be changed and they are also available separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.



● Combination Type with Parallel Shaft

Type	Product Name	Gear Ratio	List Price
Terminal Box Type	5IK100VESMT2-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$404.00
		25, 30, 36, 50, 60	\$424.00
		75, 90, 100, 120, 150, 180	\$434.00
Cable Type	5IK100VESM-□A	5, 6, 7.5, 9, 12.5, 15, 18	\$382.00
		25, 30, 36, 50, 60	\$402.00
		75, 90, 100, 120, 150, 180	\$412.00

The following items are included with each product.
Motor, Gearhead, Installation Screws, Parallel Key, Operating Manual

● Round Shaft Type

Type	Product Name	List Price
Terminal Box Type	5IK100VA-ESMT2	\$291.00
Cable Type	5IK100VA-ESM	\$269.00

The following items are included with each product.
Motor, Operating Manual

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

Permissible Torque on Combination Types

50 Hz

Unit: Upper Values: N-m/Lower Values: lb-in

Product Name	Speed r/min	300	250	200	166	120	100	83	60	50	41	30	25	20	16.6	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
5IK100VESMT2-□A		3.1	3.7	4.7	5.6	7.8	9.3	10.7	14.8	17.8	21.4	29.7	35.6	40	40	40	40	40	40
5IK100VESM-□A		27	32	41	49	69	82	94	130	157	189	260	310	350	350	350	350	350	350

60 Hz

Unit: Upper Values: N-m/Lower Values: lb-in

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
5IK100VESMT2-□A		2.6	3.1	3.8	4.6	6.4	7.7	8.8	12.3	14.7	17.6	24.5	29.4	34.6	40	40	40	40	40
5IK100VESM-□A		23	27	33	40	56	68	77	108	130	155	210	260	300	350	350	350	350	350

- 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 2~10% less, depending on the load.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

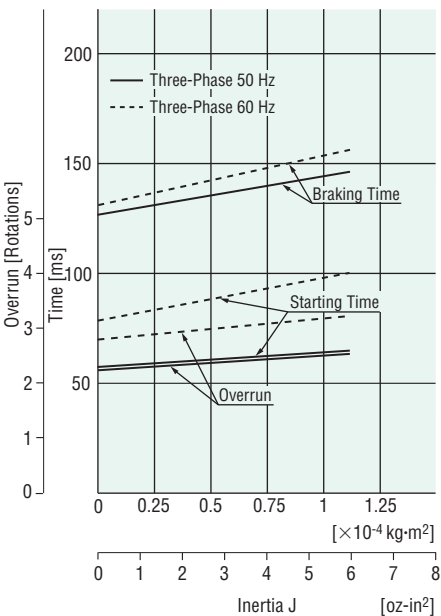
Permissible Radial Load and Permissible Axial Load

→ Page C-17

Permissible Inertia J of Combination Types

→ Page C-19

Starting and Braking Characteristics (Reference values - motor only)



Induction Motors
Electromagnetic Brake Motors
High-Efficiency KIIS Series
60 W (1/12 HP)
100 W (1/8 HP)

Induction Motors
6 W (1/125 HP)
15 W (1/150 HP)
25 W (1/30 HP)
40 W (1/19 HP)
60 W (1/12 HP)
90 W (1/8 HP)
BH Series 200 W (1/4 HP)
2-Pole, High-Speed 60-150 W (1/12-1/5 HP)

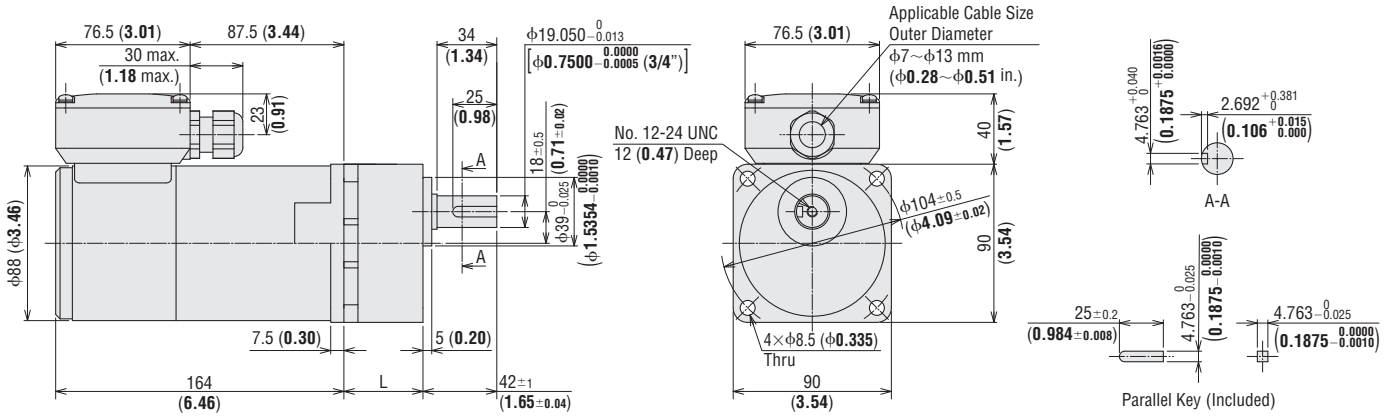
Dimensions Unit = mm (in.)

- Installation screws are included with the combination type. Dimensions for installation screws → Page C-215
- The terminal box cable outlet can be rotated and affixed in 4 possible directions, and the cable type cable outlet in 2 possible directions.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● Combination Type

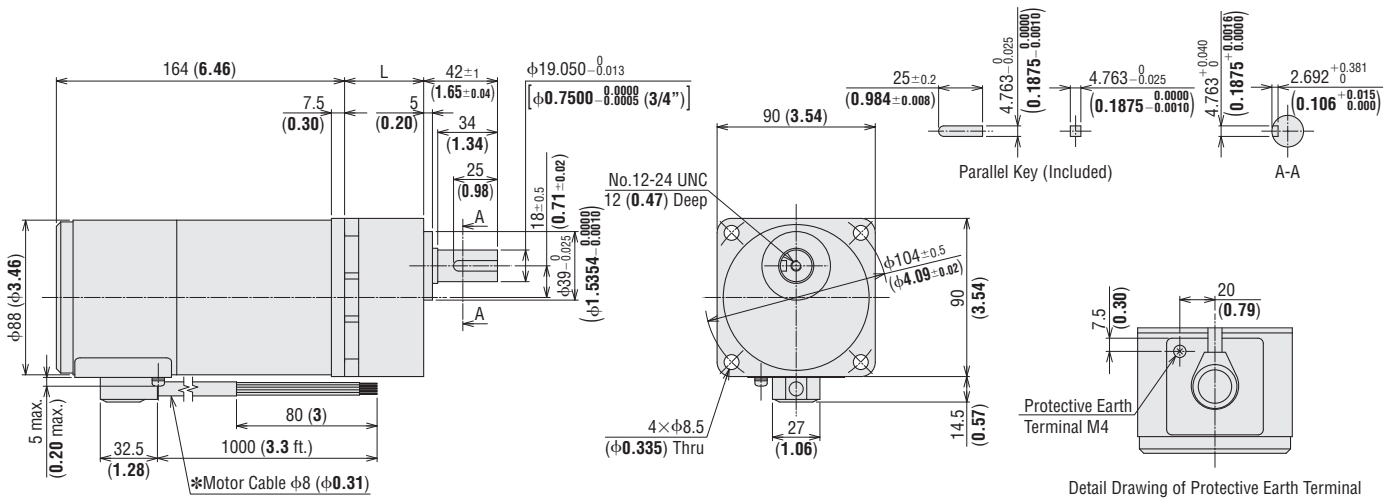
◇ Terminal Box Type

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK100VESMT2-□A	5IK100VGVR-ESMT2	5GVR□A	5~15	45	1.77	5.4	A1400A
			18~36	58	2.28		A1400B
			50~180	70	2.76	A1400C	



◇ Cable Type

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L		Mass kg lb.	2D CAD
				mm	in.		
5IK100VESM-□A	5IK100VGVR-ESM	5GVR□A	5~15	45	1.77	5.1	A1398A
			18~36	58	2.28		A1398B
			50~180	70	2.76	A1398C	



*Motor Cable Cores
 3 Motor Leads, UL Style 3271, AWG20
 2 Magnetic Brake Leads, UL Style 3266, AWG22

Overview,
Product
Series

Constant
Speed
Induction
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

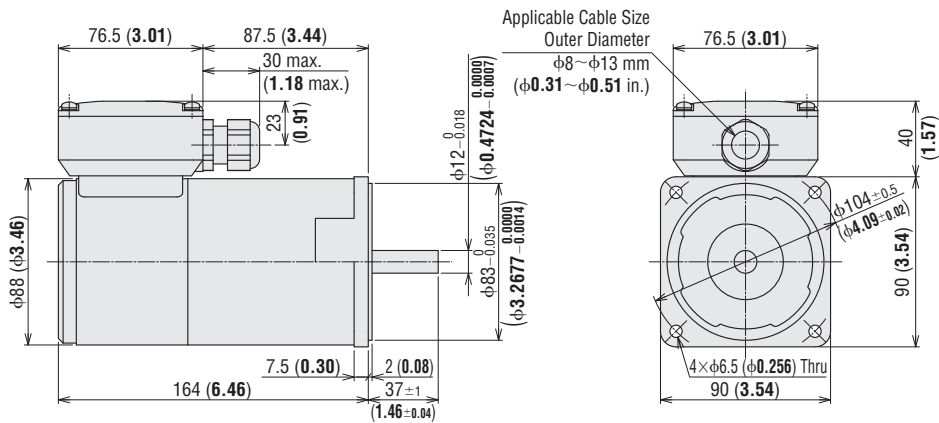
Installation

● Round Shaft Type

◇ Terminal Box Type

5IK100VA-ESMT2 Mass: 3.9 kg (8.6 lb.)

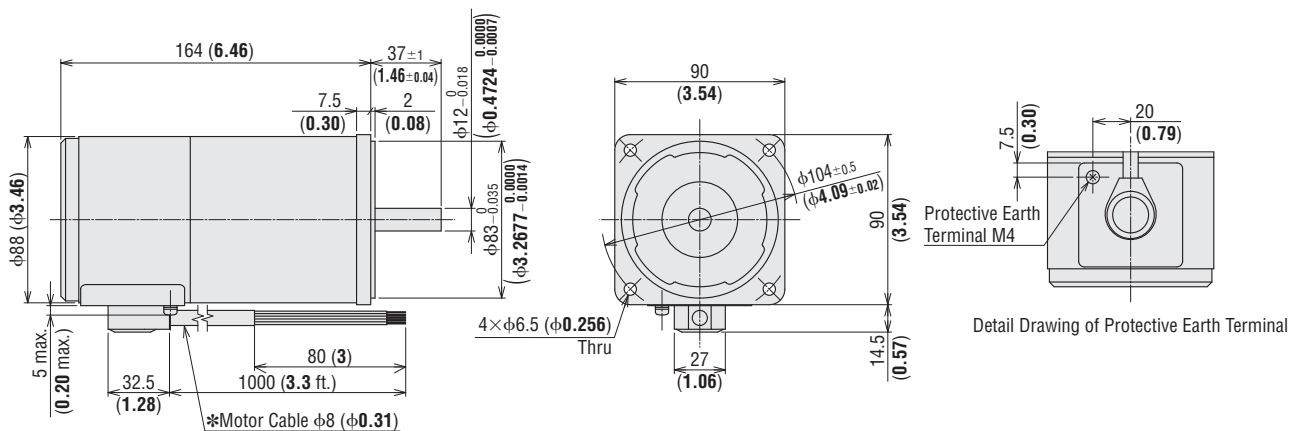
2D CAD A1324 3D CAD



◇ Cable Type

5IK100VA-ESM Mass: 3.6 kg (7.9 lb.)

2D CAD A1287 3D CAD

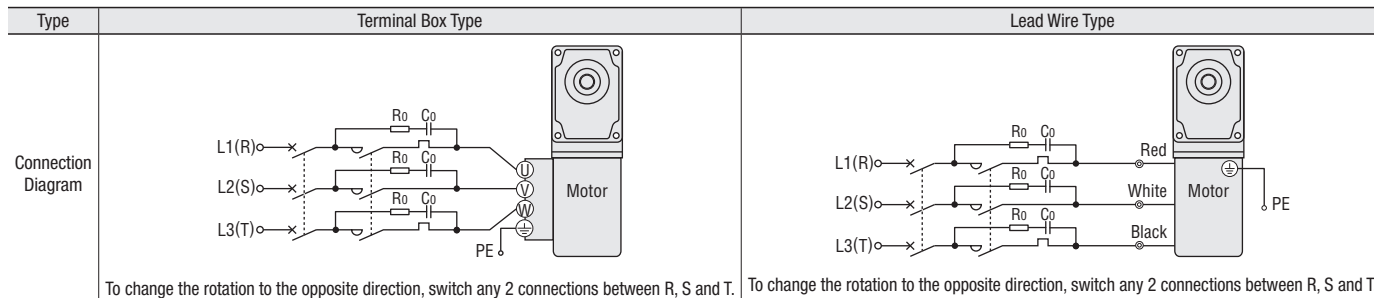


Induction Motors
Electromagnetic Brake Motors
High-Efficiency KIIIS Series
60 W (1/12 HP)
100 W (1/8 HP)

Induction Motors
6 W (1/125 HP)
15 W (1/150 HP)
25 W (1/30 HP)
40 W (1/19 HP)
60 W (1/12 HP)
90 W (1/8 HP)
BH Series
200 W (1/4 HP)
2-Pole, High-Speed
60-150 W (1/12-1/5 HP)

Connection Diagrams

● Induction Motor - Right-Angle Geared Type

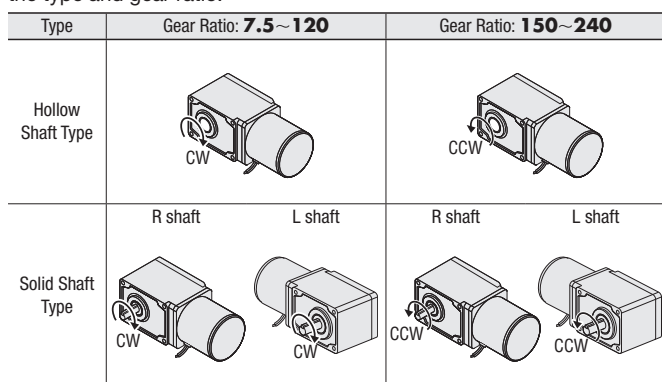


Note

When there is an overload or the output shaft is locked, always use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
Recommended electromagnetic switch → Page C-57

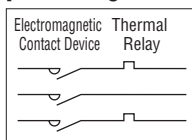
◇ Rotation direction (as in the connection diagram above)

The rotation direction of the output shaft is as follows, depending on the type and gear ratio.



● As viewed from the installation surface, the terminal box type is equipped with a terminal box on the top surface.

[Electromagnetic Switch]

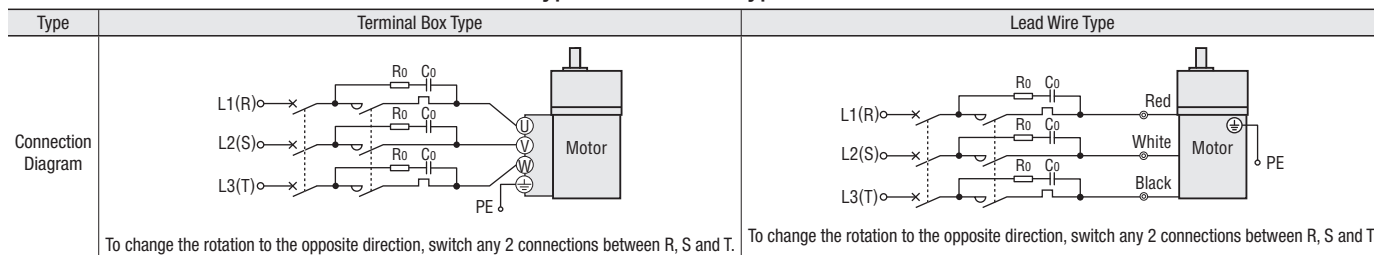


[Surge Protection]

Connect the CR circuit for surge suppression (—|—|—).
 $R_0=5\sim 200\ \Omega$
 $C_0=0.1\sim 0.2\ \mu\text{F}\ 200\ \text{WV}$

● We also offer the **EPCR1201-2** (sold separately) as an accessory. → Page C-208

● Induction Motor - Parallel Shaft Combination Type/Round Shaft Type

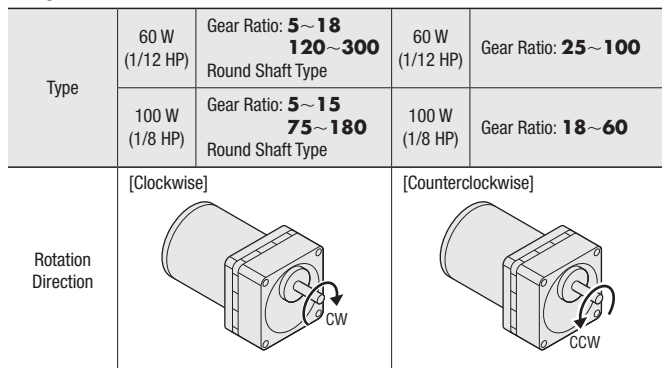


Note

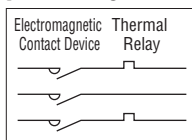
When there is an overload or the output shaft is locked, always use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
Recommended electromagnetic switch → Page C-57

◇ Rotation direction (as in the connection diagram above)

The rotation direction of the output shaft is as follows, depending on the gear ratio.



[Electromagnetic Switch]

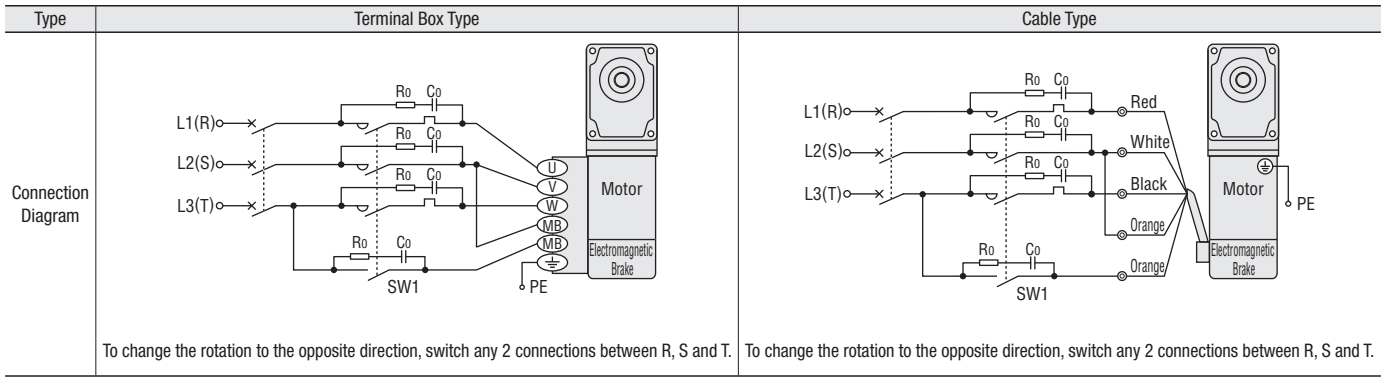


[Surge Protection]

Connect the CR circuit for surge suppression (—|—|—).
 $R_0=5\sim 200\ \Omega$
 $C_0=0.1\sim 0.2\ \mu\text{F}\ 200\ \text{WV}$

● We also offer the **EPCR1201-2** (sold separately) as an accessory. → Page C-208

● Electromagnetic Brake Type Motor - Right-Angle Geared Type



Note

When there is an overload or the output shaft is locked, always use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
Recommended electromagnetic switch → Page C-57

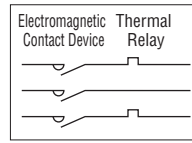
◇ Rotation direction (as in the connection diagram above)

The rotation direction of the output shaft is as follows, depending on the gear ratio of the types.

Type	Gear Ratio: 7.5~120	Gear Ratio: 150~240
Hollow Shaft Type		
Solid Shaft Type	R shaft 	R shaft
	L shaft 	L shaft

● As viewed from the installation surface, the terminal box type is equipped with a terminal box on the top surface.

[Electromagnetic Switch]



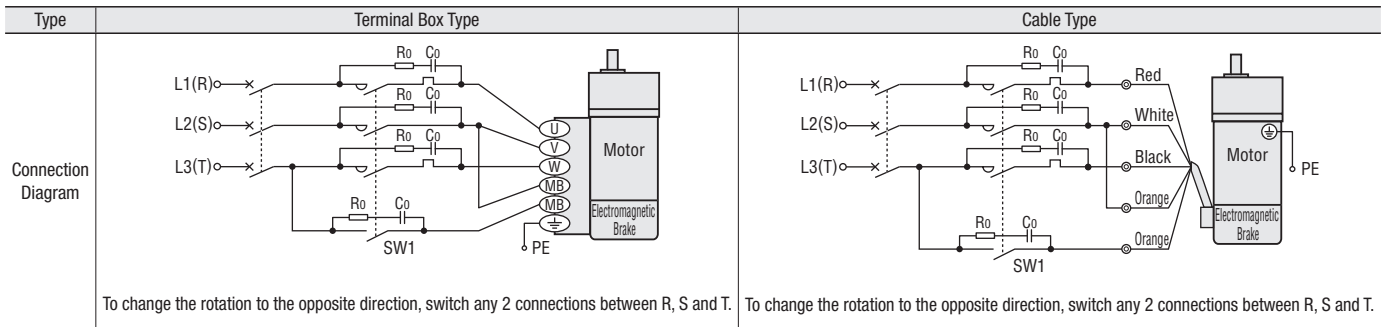
[Surge Protection]

Connect the CR circuit for surge suppression (—|—|—).
 $R_0=5\sim 200\ \Omega$
 $C_0=0.1\sim 0.2\ \mu\text{F}\ 200\ \text{WV}$

● We also offer the **EPCR1201-2** (sold separately) as an accessory. → Page C-208

[Contact Capacity of Switch SW1]
 250 VAC 5 A min. (Inductive load)
 (Interlocking)

● Electromagnetic Brake Type Motor - Parallel Shaft Combination Type/Round Shaft Type



Note

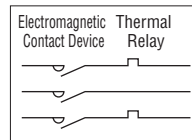
When there is an overload or the output shaft is locked, always use the electromagnetic switch and the inverter's electronic thermal function to prevent motor burnout.
Recommended electromagnetic switch → Page C-57

◇ Rotation direction (as in the connection diagram above)

The rotation direction of the output shaft is as follows, depending on the gear ratio.

Type	60 W (1/12 HP)	Gear Ratio: 5~18 120~300 Round Shaft Type	60 W (1/12 HP)	Gear Ratio: 25~100
		100 W (1/8 HP)	Gear Ratio: 5~15 75~180 Round Shaft Type	100 W (1/8 HP)
Rotation Direction	[Clockwise] 		[Counterclockwise] 	

[Electromagnetic Switch]



[Surge Protection]

Connect the CR circuit for surge suppression (—|—|—).
 $R_0=5\sim 200\ \Omega$
 $C_0=0.1\sim 0.2\ \mu\text{F}\ 200\ \text{WV}$

● We also offer the **EPCR1201-2** (sold separately) as an accessory. → Page C-208

[Contact Capacity of Switch SW1]
 250 VAC 5 A min. (Inductive load)
 (Interlocking)

Recommended Electromagnetic Switch

Always connect an electromagnetic switch when connecting the motor power supply.
Set the rated current of the motor for the stabilized current of the thermal relay.

- Fuji Electric FA Components & Systems Co., Ltd.
For 60 W (1/12 HP) motor Part number: SC11AAN-□ 10TF
For 100 W (1/8 HP) motor Part number: SC11AAN-□ 10TH
● The winding code is specified in the box □ in the part number.

Motor Rating Specifications				Winding Code
Motor Output Power	Voltage VAC	Frequency Hz	Rated Current A	
60 W (1/12 HP)	220	50	0.37	M
		60	0.33	
	230	50	0.38	P
		60	0.33	
100 W (1/8 HP)	220	50	0.55	M
		60	0.48 (0.52)*	
	230	50	0.57	P
		60	0.48 (0.52)*	

* () contains the value of the right-angle geared type.

- Mitsubishi Electric Corporation
For 60 W (1/12 HP) motor Part number: MSO-N10 0.35 A 200 V □
For 100 W (1/8 HP) motor Part number: MSO-N10 0.5 A 200 V □
● The winding name is specified in the box □ in the part number.

Motor Rating Specifications				Winding Name
Motor Output Power	Voltage VAC	Frequency Hz	Rated Current A	
60 W (1/12 HP)	220	50	0.37	220 VAC
		60	0.33	
	230	50	0.38	230 VAC
		60	0.33	
100 W (1/8 HP)	220	50	0.55	220 VAC
		60	0.48 (0.52)*	
	230	50	0.57	230 VAC
		60	0.48 (0.52)*	

* () contains the value of the right-angle geared type.

Usage with Inverter

When using in combination with an inverter, the setting frequency conditions of the inverter are as follows.

- Right-Angle Geared Type: 80 Hz max.
 - Parallel Shaft Combination Type/Round Shaft Type: 120 Hz max.
- Refer to the operating manual for motor settings and precautions.

Combination Type – List of Combinations

The combination type comes with the motor and parallel shaft gearhead pre-assembled.

● Induction Motors

Product Name	Motor Product Name	Gearhead Product Name
5IK60VEST2-□A	5IK60GVH-EST2	5GVH□A
5IK100VEST2-□A	5IK100GVR-EST2	5GVR□A
5IK60VES-□A	5IK60GVH-ES	5GVH□A
5IK100VES-□A	5IK100GVR-ES	5GVR□A

● Electromagnetic Brake Type Motors

Product Name	Motor Product Name	Gearhead Product Name
5IK60VESMT2-□A	5IK60GVH-ESMT2	5GVH□A
5IK100VESMT2-□A	5IK100GVR-ESMT2	5GVR□A
5IK60VESM-□A	5IK60GVH-ESM	5GVH□A
5IK100VESM-□A	5IK100GVR-ESM	5GVR□A

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

Overview,
Product
Series

Constant
Speed
Motors

Three-Phase
Induction
Motors

Single-Phase
Induction
Motors

Reversible
Motors

Electromagnetic
Brake Motors

Clutch &
Brake Motors

Low-Speed
Synchronous
Motors

Torque
Motors

Watertight,
Dust-Resistant
Motors

Right-Angle
Gearheads

Linear
Heads

Brake Pack

Accessories

Installation