

# Induction Motors

## 25W

Frame Size □ 80mm

1W

6W

15W

25W

40W

60W

90W

BH  
200W



Lead Wire Type



Terminal Box Type

### Specifications—Continuous Rating

Ⓢ : The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.



Model Pinion Shaft Type (Round Shaft Type)		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions①	Terminal Box Type Dimensions②	W	V	Hz	A	mN·m gfcm	mN·m gfcm	r/min	μF
Ⓢ 4IK25GN-AWU (4IK25A-AWU)	4IK25GN-AWTU (4IK25A-AWTU)	25	Single-Phase 110 Single-Phase 115	60	0.46	120 1200	170 1700	1450	6.5
Ⓢ 4IK25GN-CWE (4IK25A-CWE)	4IK25GN-CWTE (4IK25A-CWTE)	25	Single-Phase 220	60	0.22	120 1200	170 1700	1450	1.5
			Single-Phase 230	50	0.24		205 2050	1200	
			Single-Phase 230	60	0.22		170 1700	1450	
Ⓢ 4IK25GN-SW (4IK25A-SW)	4IK25GN-SWT (4IK25A-SWT)	25	Three-Phase 200	50	0.23	240 2400	190 1900	1300	—
			Three-Phase 200	60	0.21	160 1600	160 1600	1550	
			Three-Phase 220	60	0.21	160 1600	160 1600	1600	
			Three-Phase 230	60	0.22	160 1600	160 1600	1600	

- The “U” and “E” at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted. VDE approved → Page F-2
- In addition to the products shown above, the products for single-phase 100V, single-phase 200V 50/60Hz are also provided. Please contact the nearest Oriental Motor office.

### Types of Gearheads (Sold separately)

Gearhead Model	Gear Ratio
4GN□K	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
4GN10XK (Decimal Gearhead)	
4GN□RH (Hollow Shaft)	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
4GN□RA (Solid Shaft)	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

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

## Gearmotor–Torque Table

- Gearheads and decimal gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number.
- A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50Hz: 1500r/min, 60Hz: 1800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead (gear ratio: 10) between the gearhead and the motor. In that case, the permissible torque is 8N·m/80kgfcm. However, when a gearhead of 1/25~1/36 is connected, the value for permissible torque is 6N·m/60kgfcm.

### 50Hz

Unit = Upper Values: N·m / Lower Values: kgfcm

Model Motor/ Gearhead	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4IK25GN-CWE</b> <b>4IK25GN-CWTE</b> / <b>4GN□K</b>		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
		5.0	6.0	8.3	10	12	15	21	25	30	37	45	54	68	80	80	80	80	80	80	80
<b>4IK25GN-SW</b> <b>4IK25GN-SWT</b> / <b>4GN□K</b>		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
		4.6	5.5	7.7	9.2	12	14	19	23	28	35	42	50	63	75	80	80	80	80	80	80

### 60Hz

Unit = Upper Values: N·m / Lower Values: kgfcm

Model Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4IK25GN-AWU</b> <b>4IK25GN-AWTU</b> <b>4IK25GN-CWE</b> <b>4IK25GN-CWTE</b> / <b>4GN□K</b>		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
		4.1	5.0	6.9	8.3	10	12	17	21	25	31	37	45	56	67	80	80	80	80	80	80
<b>4IK25GN-SW</b> <b>4IK25GN-SWT</b> / <b>4GN□K</b>		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
		3.9	4.7	6.5	7.8	9.7	12	16	19	23	29	35	42	53	63	79	80	80	80	80	80

## Gearmotor–Torque Table when Right-Angle Gearhead is Attached

→ Page A-251

## Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) → Page A-14

Gearhead → Page A-14

## Permissible Load Inertia J (GD<sup>2</sup>) for Gearhead

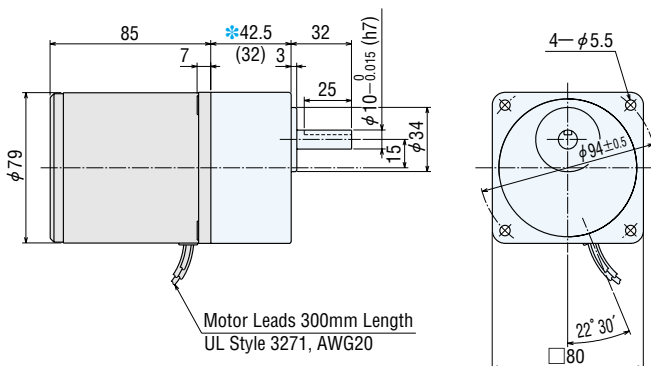
→ Page A-15

## Dimensions (Scale 1/4 Unit = mm)

Mounting screws are included with a gearhead. Dimensions for screw included → Page A-321

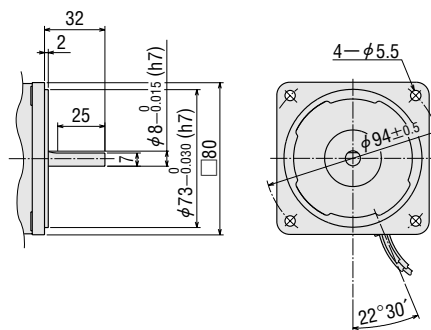
### Lead Wire Type ①

Mass: Motor 1.5kg  
Gearhead 0.65kg



### Shaft Section of Round Shaft Type (Common to lead wire type, terminal box type)

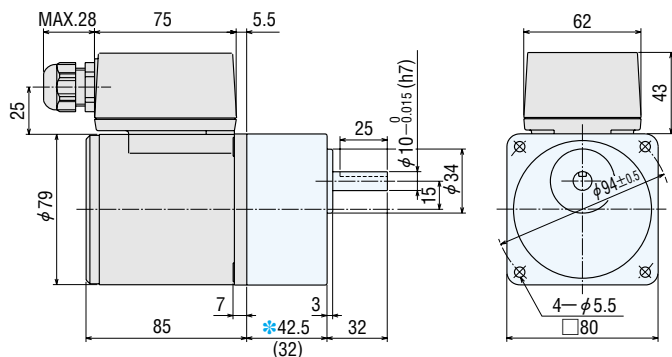
(Mass is the same as that of pinion shaft type.)



Asterisk (\*) indicates dimensions of **4GN25K~180K**  
The figure in parenthesis indicates dimensions of **4GN3K~18K**

### Terminal Box Type ②

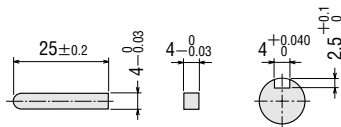
Mass: Motor 1.7kg  
Gearhead 0.65kg



Asterisk (\*) indicates dimensions of **4GN25K~180K**  
The figure in parenthesis indicates dimensions of **4GN3K~18K**

- Use vinyl cabtyre cord (VCTF) with the diameter of  $\phi 6 \sim \phi 12$ .
- Details of terminal box → Page A-324

### Key and Key Slot (Included with the gearhead)

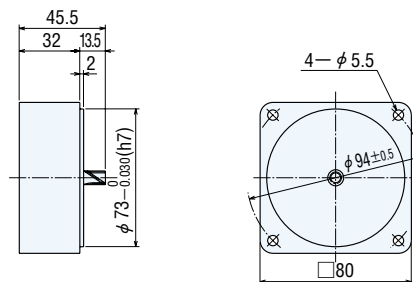


### Decimal Gearhead

(Can be connected to **GN** pinion shaft type)

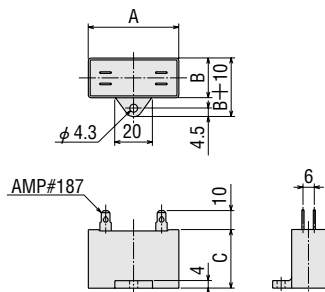
#### 4GN10XK

Mass: 0.4kg



### Capacitor

(Included with single-phase motors)



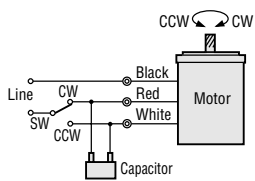
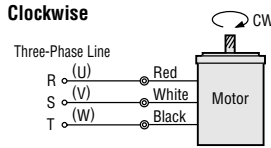
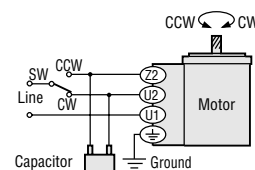
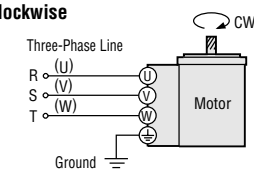
### Capacitor Dimensions (mm)

Model Pinion Shaft Type (Round Shaft Type)		Capacitor Model	A	B	C	D	E	Mass (g)
Lead Wire Type	Terminal Box Type							
<b>4IK25GN-AWU</b> <b>(4IK25A-AWU)</b>	<b>4IK25GN-AWTU</b> <b>(4IK25A-AWTU)</b>	CH65CFAUL	38	21	31	—	—	35
<b>4IK25GN-CWE</b> <b>(4IK25A-CWE)</b>	<b>4IK25GN-CWTE</b> <b>(4IK25A-CWTE)</b>	CH15BFAUL	38	21	31	—	—	35

- Capacitor cap is provided with the capacitor.

## Wiring Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. “CW” means clockwise direction, while “CCW” means counterclockwise direction.
- The model names in the table are not only for pinion shaft type but for round shaft type.

Lead Wire Type		Terminal Box Type	
<b>4IK25GN-AWU</b> <b>4IK25GN-CWE</b>	<b>4IK25GN-SW</b>	<b>4IK25GN-AWTU</b> <b>4IK25GN-CWTE</b>	<b>4IK25GN-SWT</b>
 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, flip SW to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, flip SW to CCW.</p>	 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, flip SW to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise direction, change any two connections between U, V and W.</p>	 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, flip SW to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise (CCW) direction, flip SW to CCW.</p>	 <p><b>Clockwise</b> To rotate the motor in a clockwise (CW) direction, flip SW to CW.</p> <p><b>Counterclockwise</b> To rotate the motor in a counterclockwise direction, change any two connections between U, V and W.</p>

- How to connect a capacitor → Page A-325

**Note:**

Change the direction of 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, the motor may ignore the reversing command or change its direction of rotation after some delay.

### Inner Wiring Diagram for 4-Terminal Capacitor

Terminals of the capacitor are connected as shown in the figure. For lead wire connection, use one lead wire for each individual terminal.

