PRODUCT NUMBER CODE

Motor

5	I	K	40	R	GN	-	C	T
①	②	③	④	⑤	⑥		⑦	⑧

①	Motor frame size	0: 42mm 2: 60mm 3: 70mm 4: 80mm 5: 90mm 6: 104mm
②	Motor type I : Induction motor R : Reversible motor T : Torque motor	
③	Series	K : K series
④	Output power (W)	(Example) 40 : 40W
⑤	R : The auffix "-R" after the output power means speed adjustable motor.	
⑥	Motor shaft type GN : GN type pinion shaft GU : GU type pinion shat A : Round shaft A1 : Keyway	
⑦	Voltage·Poles A : Single-phase 110V50/60Hz 4P E : Single-phase 110V/120V60Hz 4P S3 : Three-phase 380/400/415V50/60Hz 4P B : Single-phase 110V50Hz 2P H : Single-phase 220/230V60Hz 4P T : Three-phase 200/220/230V50/60Hz 2P C : Single-phase 220/230V50Hz S : Three-phase 200/220/230V50/60Hz 4P T3 : Three-phase 380/400/415V50/60Hz 2P 4P D : Single-phase 220V50Hz 2P	
⑧	T : Terminal box type F : W/Fan FF : W/Forced fan M : Power off activated type electromagnetic brake motor	

Description Of Reducer Model

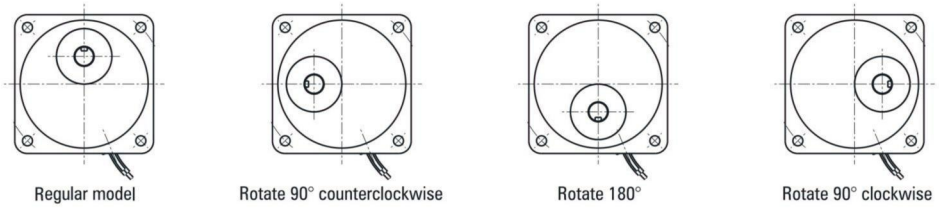
5	GN	50	K
①	②	③	④

①	Gearhead frame size	0: 42mm 2: 60mm 3: 70mm 4: 80mm 5: 90mm 6: 104mm
②	Type of pinion	GN : GN type gear GU : GU type gear
③	Gear ratio	(e.g) 50 : Gear ratio of 1 : 50 10x denotes the decimal gearhead of ratio 1 : 10
④	Bearing type	K : Bearing (Make KB for type GU square case)

Note: If the motor assembly with parallel gear box pls cancel item no 5, if assembly with right angle gear box pls cancel item no 4.

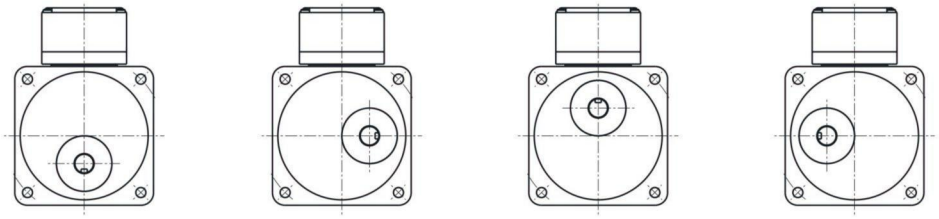
Parallel Shaft Series

● Lead Style



Regular model | Rotate 90° counterclockwise | Rotate 180° | Rotate 90° clockwise

● Junction Box



Regular model | Rotate 90° counterclockwise | Rotate 180° | Rotate 90° clockwise

GENERAL SPECIFICATIONS OF MOTORS

6W～150W、2P・High Speed

Item	Specifications
Insulation Resistance	In the circumstance of normal temperature and humidity, the resistance can be up to 100MΩ, measured DC 500vinsulation resistance measurer between the motor wiring and motor shell while the motor is working.
Insulation Voltage	In the circumstance of normal temperature and humidity, there will be no problem supplying the power of 1. 5kV (three-phase 400V is 2kV) at 50Hz/60Hz between the metal wiring and motor shell for 1 minute while the motor is working.
Temperature Rise	The temperature rise of winding are 80℃ or less measured by the resistance change method after rated motor operation under normal ambient temperature and humidity, with connecting a gearhead or equivalent heat radiation plate※.
Insulation Class	UL/CSA Standards: Class A (105℃)EN Standards: Class B (130℃)
Overheat Protection	Thermal protector inside (automatic return) Class B (opening: 120℃±5℃、75℃±15℃) Class F (opening: 145℃±5℃、100℃±15℃)
Ambient Temperature	Single-phase 100VAC、Three-phase 200VAC: -10～+50℃ (Non Freezing) Others: -10～+40℃ (Non Freezing)
Ambient Humidity	≤85% (Non condensing)
Protection Class	Lead wire type: IP20 Terminal box type Single-phase 100V50/60HZ、110/120V60HZ、220/230V50HZ、220/230V60HZ 25W-180W Type: IP54 (Excluing the installation surface of the round shaft type) Three-phase 200/220 /230V50/60HZ、380/400/415V50/60HZ 25W-180W Type: IP54 (Excluing the installation surface of the round shaft type)

Heat Radiation Plate (Material: Aluminum)

Motor Type	Size	Thickness (mm)
3W type	80X80	5
6W type	115X115	
15W type	125X125	
25W(2P·high-speed 4IK40 type, 4IK60 type)	135X135	
40W、60W type	165X165	
60W、90W、120W type (2P·High-speed 5IK150 type)	200X200	
120W、140W、200W type	230X230	

Power Off Activated Type Electromagnetic Brake Motor Features

1、 Structure and operation principle

Table 3 is the structure for the electromagnetic brake motor. We produce the power off activated type. Exerting the voltage on the winding, it will magnetize the armature pressed by the spring. The motor will be in a stage of rotating, when there is a backlash between the armature and brake rim. Once the winding voltage is cut down, under the influence of spring, the armature press the brake rim, which will create a brake force. Then the motor gets to a stop.

2、 The characteristics of the electromagnetic brake

It is an AC power off activated type electromagnetic brake which is connected directly with the motor. It will get to a blink stop and keep load when the supply is power off. It will keep the torque between 0.05～2.0Nm. It is especially suitable for the safety brake in the circumstance of unconsciously power off. The electromagnetic can change its direction frequently. It can be stopped 6 times in a minute. But be sure that it lasts for 3 seconds or more.

After we set a commutating loop in the brake, it can share the power supply with the motor.

※The value is standard. It will be change in different condition. When actually used, be sure to make the surface temperature of the motor less than 90℃.

3、 The features for the starting time and brake time

The starting time means the time for the motor's starting time plus the electromagnetic brake release time. The brake time means the time from power cut off to the time of motor completely stop. The over-run, starting time and brake time will be different according to the different applications.

Electromagnetic Brake (Power Off Activated Type)

Phase	Size	Output	Voltage	Frequency	Current	Input	Keep Torque		Over-run
	MM	W	V	Hz	A	W	N.cm	Kgf.cm	Cycles
1Phase	70	15	110 120 220 230	50/60	0.091	8.20	0.50	50	3.5
	80	25							
	90	40							
		60			0.111	10.0	1.00	100	
		90							
		120							
	100	120							
		140							
		200			0.144	13.0	2.00	200	
3Phase	60	6	220～230	50/60	0.073	6.60	0.25	25	
	70	15	380～415		0.037	6.60	0.25	25	
	80	25	200～230 380～415		0.091	8.20	0.50	50	
	90	40							
		60			0.046	8.20	0.50	50	
		90	200～230 380～415		0.111	10.0	1.00	100	
		120							
	100	120			0.056	10.0	1.00	100	
		140							
		200	200～230 380～415		0.144	13.0	2.00	200	
					0.144	13.0	2.00	200	

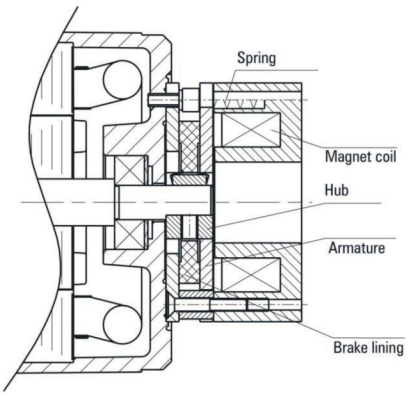


Fig.3

The Features Of The Speed Control Motor

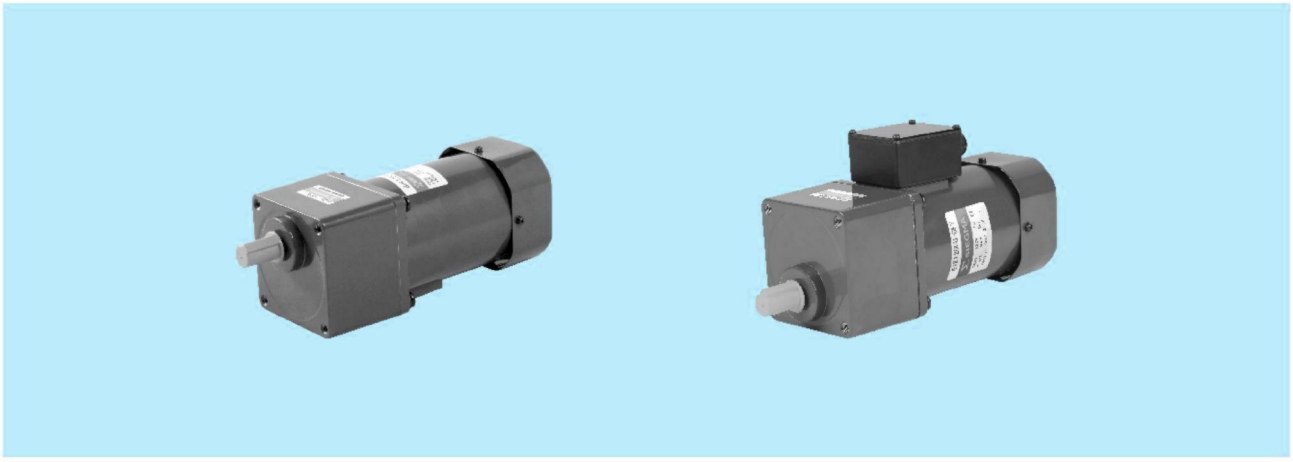
1、 It is a unit of the controller and motor. It only needs to connect one time. The speed can be easily adjusted by the potentiometer. The controller is fixed with speed-control loop, capacitor, speed enactment and etc. There is no function of instant stop in the unit.

2、 The controller can make the speed variable between 90-1400r/min at 50Hz and 90-1700r/min at 60Hz.

3、 Please don't run motor at low speed for long time avoiding overheat.

INDUCTION MOTORS

120W □104mm



Specs Continuous Rating

Model・Type Upper:Pinion Shaft Below:Round Shaft		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	mN.m	r/min	μF
6IK120GU-AF (6IK120A-AF)	6IK120GU-AFT (6IK120A-AFT)	120	1ph 100	50	2.10	600	930	1250	30.0
				60	2.50		750	1550	
6IK120GU-EF (6IK120A-EF)	6IK120GU-EFT (6IK120A-EFT)	120	1ph 110	60	1.70	600	750	1550	20.0
			1ph 120		1.80				
6IK120GU-CF (6IK120A-CF)	6IK120GU-CFT (6IK120A-CFT)	120	1ph 220	50	0.95	750	930	1250	8.0
			1ph 230						
6IK120GU-HF (6IK120A-HF)	6IK120GU-HFT (6IK120A-HFT)	120	1ph 220	60	0.95	700	750	1550	8.0
			1ph 230		1.00				
6IK120GU-SF (6IK120A-SF)	6IK120GU-SFT (6IK120A-SFT)	120	3ph 220	50	0.75	2200	890	1300	-
				60	0.70	2000	730	1600	
6IK120GU-S3F (6IK120A-S3F)	6IK120GU-S3FT (6IK120A-S3FT)	120	3ph 380	50	0.43	2200	890	1300	-
				60	0.40	2000	730	1600	

●When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
●Note: "-A" it means the voltage 110V, the assembly capacitor vaule it is according the label.

Type

● Motor

Type	Model	
	Pinion Shaft	Round Shaft
Lead Wire Type	6IK120GU-AF	6IK120A-AF
	6IK120GU-EF	6IK120A-EF
	6IK120GU-CF	6IK120A-CF
	6IK120GU-HF	6IK120A-HF
	6IK120GU-SF	6IK120A-SF
	6IK120GU-S3F	6IK120A-S3F
Terminal Box Type	6IK120GU-AFT	6IK120A-AFT
	6IK120GU-EFT	6IK120A-EFT
	6IK120GU-CFT	6IK120A-CFT
	6IK120GU-HFT	6IK120A-HFT
	6IK120GU-SFT	6IK120A-SFT
	6IK120GU-S3FT	6IK120A-S3FT

● Parallel Shaft Gearhead (Sold Separately)

Gearhead Type	Gearhead Model	Gear Ratio
Long Life ● Low Noise	6GU□K	3、3.6、5、6、7.5、9、10、12.5、15、18、20、25、30、36、40、50、60、75、90、100、120、150、180、200

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

Gear Motor-Torque Table

- Gearhead and mid-gearbox can be sold separately. Enter the code that represents the terminal box type (T) in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.

- The colored background ▭ indicates the same rotating direction of the motor while the rotating direction of others are opposite.
- 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 motor. In that case, the permissible torque is 20N·m.

Allowance Torque Unit：Upside（N.m）/ Belowside（kgf.cm）

Type Motor/Gearhead	Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	Speed r/min	50Hz	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12.5	10	8.3	7.5
6IK120GU-AF□	6GU□K	50Hz	2.30	2.70	3.80	4.50	5.60	6.80	6.68	8.50	10.2	12.2	12.0	15.3	18.4	22.1	24.0	30.7	36.8	40.0	40.0	40.0	40.0	40.0	40.0	40.0
6IK120GU-CF□			23.4	27.5	38.7	45.9	57.1	69.3	68.2	86.7	104	124	123	156	187	225	245	313	375	400	400	400	400	400	400	400
6IK120GU-SF□			2.22	2.60	3.60	4.30	5.40	6.50	6.42	8.10	9.70	11.7	11.6	14.7	17.6	21.1	23.2	29.4	35.2	40.0	40.0	40.0	40.0	40.0	40.0	40.0
			2.40	26.5	36.7	43.8	55.0	66.3	65.6	87.6	98.8	119	118	149	179	215	236	300	359	400	400	400	400	400	400	400

Allowance Torque Unit：Upside（N.m）/ Belowside（kgf.cm）

Type Motor/Gearhead	Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	Speed r/min	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
6IK120GU-AF□	6GU□K	60Hz	1.80	2.20	3.00	3.60	4.60	5.50	5.40	6.80	8.20	9.80	9.70	12.4	14.9	17.8	19.4	24.8	29.7	37.1	40.0	40.0	40.0	40.0	40.0	40.0
6IK120GU-EF□			18.3	22.4	30.6	36.7	46.9	56.1	55.0	69.3	83.6	100	99.0	126	152	181	198	253	303	378	400	400	400	400	400	400
6IK120GU-HF□			1.80	2.20	3.00	3.60	4.40	5.30	5.20	6.70	8.00	9.60	9.40	12.0	14.5	17.3	18.8	24.1	28.9	36.1	40.0	40.0	40.0	40.0	40.0	40.0
6IK120GU-SF□			18.3	22.4	30.6	36.7	44.8	54.0	53.3	68.3	81.6	97.9	95.9	122	148	176	192	245	295	368	400	400	400	400	400	400

To Allow The Hoisting Of The Load Allow Axial Load

Motor (Round shaft) →P215
Gearhead→P215

J Permissible Load Inertia J For Gearhead

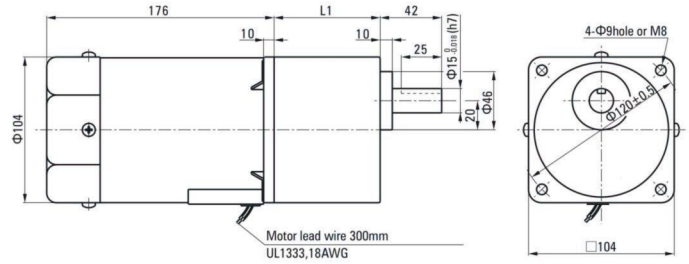
→P215

Dimensions (Unit mm)

Mounting screws are included with gearhead.

● Lead wiring Type ①

Weight : Motor : 4.8kg Gearhead : 2.1kg

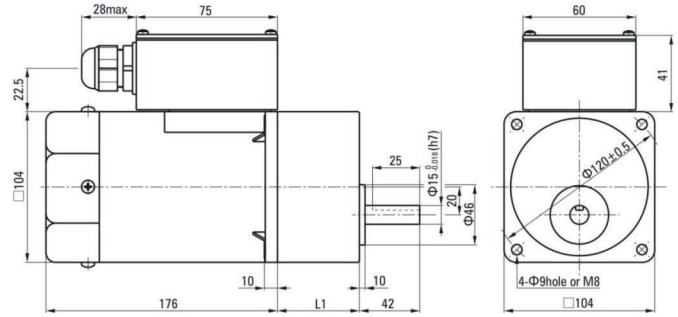


Motor Model	Gearhead Model	Gear Ratio	L1
6IK120GU-AF 6IK120GU-EF 6IK120GU-CF 6IK120GU-HF 6IK120GU-SF 6IK120GU-S3F	6GU□K	3~200	72

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

● Terminal Box Type ②

Weight : Motor : 4.95kg Gearhead : 2.1kg



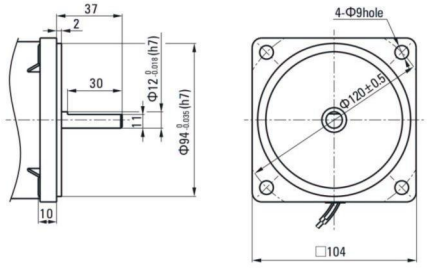
Motor Model	Gearhead Model	Gear Ratio	L1
6IK120GU-AFT 6IK120GU-EFT 6IK120GU-CFT 6IK120GU-HFT 6IK120GU-SFT 6IK120GU-S3FT	6GU□K	3~200	72

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

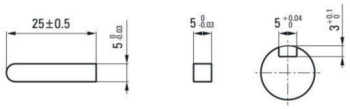
●Use cable with a diameter of Φ6~Φ12mm

● Shaft Section Of Round Shaft Type

Excluding weight and the shaft section motor shape are the same as those of the pinion shaft type.



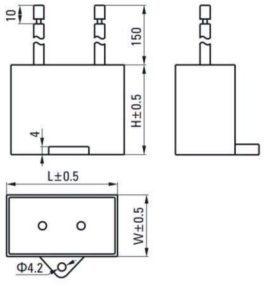
● Key・Keyway (Accessory Of Gearhead)



Formal Dimension Of Capacitor

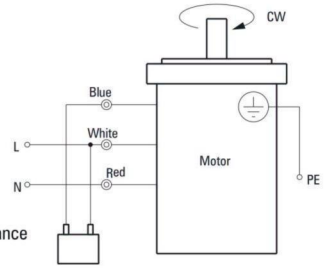
Model		Capacitor Model	L	W	H
Pinion Shaft	Round Shaft				
6IK120GU-AF	6IK120A-AF	ZD300CFAUL	58	26.0	38
6IK120GU-EF	6IK120A-EF	ZD200CFAUL	47	23.0	35
6IK120GU-CF	6IK120A-CF	ZD80BFAUL	48	26.5	38

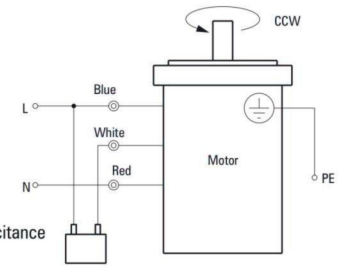
● Note: Conventional capacitor is a lead wire type. Inserted 187# is optional
● Enter the code that represents the terminal box type (T) in the box (□) within the model name

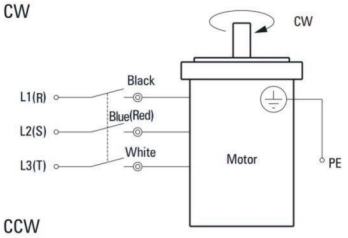


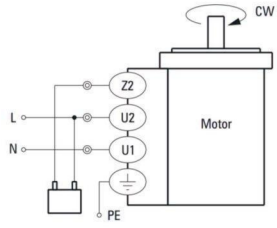
Wiring Diagram

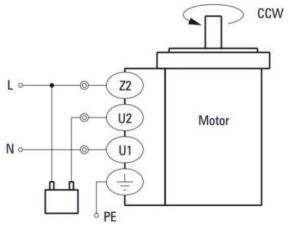
- The direction of motor rotation is as viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Name indicated in the list is pinion shaft type, also valid for the equivalent round shaft type.

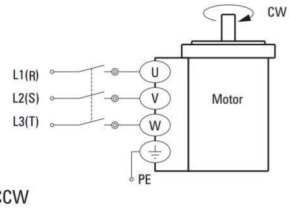
<table>
<tr><th colspan="3">Lead Wire Type</th></tr>
<tr><th colspan="2">6IK120GU-AF、6IK120GU-EF、 6IK120GU-HF、6IK120GU-CF</th><th>6IK120GU-SF(S3F)</th></tr>
<tr>
<td>CW


Capacitance</td>
<td>CCW


Capacitance</td>
<td>CW


CCW
To change the rotation direction change any two connections among R, S and T</td>
</tr>
<tr><th colspan="3">Terminal Box Type</th></tr>
<tr><th colspan="2">6IK120GU-AFT、6IK120GU-EFT、 6IK120GU-HFT、6IK120GU-CFT</th><th>6IK120GU-SFT(S3FT)</th></tr>
<tr>
<td>CW


Capacitance</td>
<td>CCW


Capacitance</td>
<td>CW


CCW
To change the rotation direction change any two connections among U, V and W</td>
</tr>
</table>

Note:

Change the direction of single-phase motor rotation only after bring the motor to a stop.

If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.