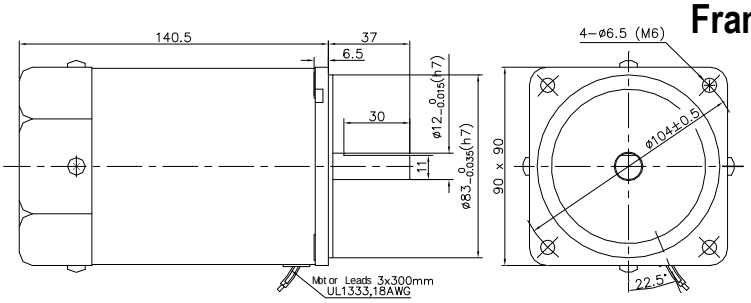
Speed Control Motors 90W (GU)

Frame Size: □90mm (□3.54 in.)

- Motor Dimensions:

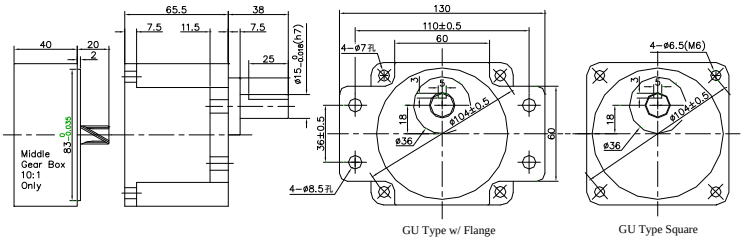


- Induction motor specifications-continuous Rating (leads wire type)

Model		Output Power	Voltage	Freq.	Speed Range	Allowable Torque		Starting Torque	Current	Capacitor
						1200rpm	90rpm			
Pinion Shaft	Round Shaft	W	Vac	Hz	r/min	mN.m	mN.m	mN.m	Amp	μF/V
5IK90RGU-AF	5IK90RA-AF	90	1ph110	50	90～1400	710	230	405	2.75	25/250
				60	90～1700	490	260	35	0.28	
5IK90RGU-CF	5IK90RA-CF	90	1ph220	50	90～1400	710	230	410	1.2	5/450

- These motors have built in thermal protectors: If a motor overheats the thermal protector opens and the motor stops. When the motor temperature drops to the rated level, the thermal protector closes and the motor restarts.

- Gearhead dimensions & weight:



Item	Ratio	L	Weight	
		mm	Kg	lb
Gearhead (5GUxxK)	3 - 9	65.5	1.21	2.66
	10~18		1.30	2.86
	20 - 75		1.40	3.08
	90 - 200		1.45	3.19
10:1 middle gearbox		40	0.6	1.32
Motor		141	3.4	7.48

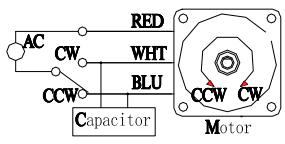
- Gear Motor-Torque Table

Model	Gear Ratio		X:1	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	200
	Efficiency		%	81						73			66						59					
	Speed	50Hz	RPM	500	417	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	7.5
		60Hz	RPM	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	9
5IK90RGU-A 5IK90RGU-C	5GU□KB	50Hz	Nm	1.7	2	2.8	3.4	4.3	5.1	6.4	7.7	9.2	11.6	13.9	16.6	20	20	20	20	20	20	20	20	20
			Kg.cm	17.3	20.4	28.6	34.7	43.9	52	65.3	78.6	93.9	118	142	169	200	200	200	200	200	200	200	200	200
		60Hz	Nm	1.4	1.7	2.3	2.8	3.5	4.2	5.2	6.2	7.5	9.4	11.3	13.5	18.8	20	20	20	20	20	20	20	20
			Kg.cm	14.3	17.3	23.5	28.6	35.7	42.9	53.1	63.3	76.5	95.9	115	128	192	200	200	200	200	200	200	200	200

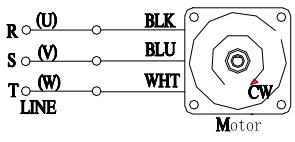
- Enter the gear ratio in the box □. Colored background indicates the output shaft rotate in the same direction as the motor shaft.
- The speed is calculated based on the syschronous speed (50 Hz: 1500rpm; 60Hz: 1800 rpm) by the gear ratio.
- Higher gear ratio (>200) can be acchived by adding a middle gearbox (10:1 only). Using Middle Gearbox limits Max.torque to3Nm (30kg.cm)

- **Connection Diagrams:**

● Lead Wire Single Phase

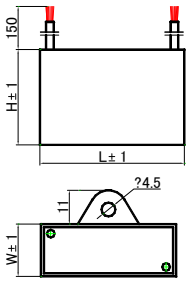


● Lead Wire Three Phase



- **Capacitor:**

Value		Dimensions		
uF	V	L	H	W
3.5 - 4.0	250	37	18	28
1.8 - 2.5	450			
20 - 30	250	57	32	46
10 - 15	450			



90W(GU) Frame Size: □90mm (□3.54 in.)

- **General specifications for AC motors:**

Item	Specifications
Insulation Resistance	100 MΩ or more when 500VDC is applied between the windings and the frame
Dielectric Strength	Sufficient to withstand 1.5 kV at 50/60Hz applied between the windings and the frame for 1 minute
Temperature Rise	Temperature rise of windings should be lower than 80°C (60°Cwith fan)
Insulation Class	Class B (130°C)
Overheat Protection	Build in thermal protector (automatic return); Class B (O: 120±5°C, C: 75±15°C）
Ambient Temperature	14°F-104°F (-10°C～+40°C) [three-Phase: 14°F-122°F (-10～+50°C)] (Nonfreezing)
Ambient Humidity	85% or less (Noncondensing)
Degree of Protection	Lead wire type: IP20; Terminal Box Type: IP54

Notes: Above specifications is for motor operated under normal ambient temperature and humidity conditions

- **Permissible load for round shaft motors & Permissible Load Inertia at the Motor Shaft**

Frame Size	Shaft Dia.	Permissible overhung load (from end of shaft)				Permissible Load Inertia at the Motor Shaft	
		10 mm		20 mm		J（×10 kg. ㎡)	GD (kg. ㎡)
	mm	lb	N	lb	N		
5IK60	10	31.5	140	44.9	200	1.1	4.6
	12	53.9	240	60.7	270		

Permissible thrust load: Avoid thrust load as much as possible or keep it to no more than half the motor weight

- **Permissible load for gearheads**

Frame Size	Gear Ratio	Maximum Permissible torque		Permissible overhung load (from end of shaft)				Permissible thrust load	
				10 mm		20 mm			
		lb-in	N.m	lb	N	lb	N	lb	N
5GU	3～9	177	20	89.9	400	112.4	500	34	150
	12.5～18			101.1	450	134.8	600		
	25～200			112.4	500	157.3	700		

- **Heat Radiation Plate Dimension** (Material: Aluminum)：200×200 （for 5IKxxxGU type motors）

- **Product Number Codes for Motors**:

5	I	K	90	R	GU	-	C	F
Frame size 2: 60mm 3: 70mm 4: 80mm 5: 90mm 6: 100mm	Motor Type I: Induction R: Reversible T: Torque	Series K: k series	Power 90 = 90W	Control R: speed control motor	Shaft A: round w/ flat A1: round w/keyway GN: Normal Pinion GU: Enhanced Pinion		Voltage & Poles A: Single phase 100~120VAC, 4P B: Single phase 100~120VAC, 2P C: Single phase 220~240VAC, 4P D: Single phase 220~240VAC, 2P S: Three phase 220~240VAC, 4P T: Three phase 220~240VAC, 2P S3: Three phase 380~415VAC, 4P T3: Three phase 380~415VAC, 2P	Accessory F: W/Fan FF: W/forced Fan M: W/Brake T: W/Terminal Box

- **Product Number Codes for Gearheads**:

5	GU	50	K
Frame size 2: 60mm 3: 70mm 4: 80mm 5: 90mm 6: 100mm	Gear Type GN: Normal Gear GU: Enhanced Gear	Gear Ratio 50 = 50:1	Bearing K: Normal Ball Bearing KB: Enhanced for GU Type B: Sleeve bearing

- **Terminal Boxes**: