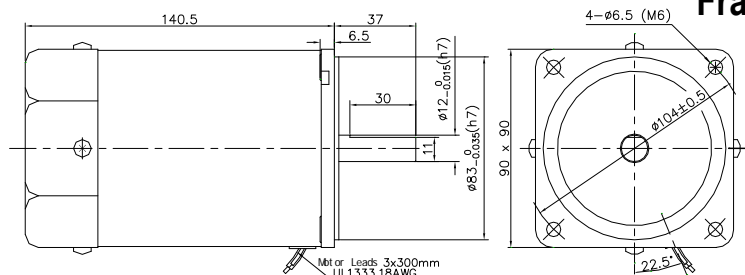


Speed Control Motors 120W (GU) Frame Size: □90mm (□3.54 in.)

• Motor Dimensions:



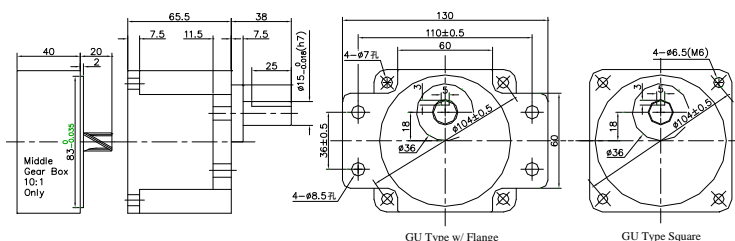
• Induction motor specifications-continuous Rating (leads wire type)



| Model | | Output Power | Voltage | Freq. | Speed Range | Allowable Torque | | Starting Torque | Current | Capacitor |
|--------------|-------------|--------------|---------|-------|-------------|------------------|-------|-----------------|---------|-----------|
| Pinion Shaft | Round Shaft | W | Vac | Hz | r/min | 1200rpm | 90rpm | mN.m | Amp | μF/V |
| 5IK120RGU-AF | 5IK120RA-AF | 120 | 1ph110 | 50 | 90~1400 | 750 | 330 | 530 | 3.5 | 30/250 |
| | | | | 60 | 90~1700 | 490 | 160 | 35 | 0.28 | |
| 5IK120RGU-CF | 5IK120RA-CF | 120 | 1ph220 | 50 | 90~1400 | 750 | 330 | 530 | 1.5 | 7/450 |

• 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 | 3.6 | 7.92 | |

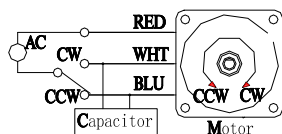
• Gear Motor-Torque Table

| 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 | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz |
| 5IK120RGU-A 5IK120RGU-C | 5GU□KB | 50Hz | Nm | 2.3 | 2.7 | 3.8 | 4.5 | 5.6 | 6.8 | 8.5 | 10.2 | 12.2 | 15.3 | 18.4 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | |
| | | | Kg.cm | 23.4 | 27.5 | 38.7 | 45.9 | 57.1 | 69.3 | 86.7 | 104 | 124 | 156 | 187 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | |
| | | 60Hz | Nm | 1.8 | 2.2 | 3 | 3.6 | 4.6 | 5.5 | 6.8 | 8.2 | 9.8 | 12.4 | 14.9 | 17.8 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | Kg.cm | 18.3 | 22.4 | 30.6 | 36.7 | 46.9 | 56.1 | 69.5 | 83.6 | 100 | 126 | 152 | 181 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |

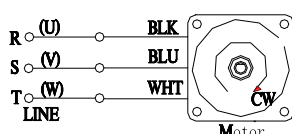
• Enter the gear ratio in the box □. Colored background indicates the output shaft rotate in the same direction as the motor shaft.
 • The speed is calculated based on the synchronous speed (50 Hz: 1500rpm; 60Hz: 1800 rpm) by the gear ratio.
 • Higher gear ratio (>200) can be achieved by adding a middle gearbox (10:1 only). Using Middle Gearbox limits Max.torque to 3Nm (30kg.cm)

• Connection Diagrams:

• Lead Wire Single Phase

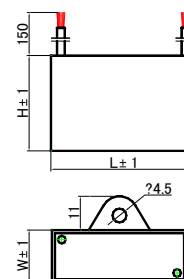


• Lead Wire Three Phase



• Capacitor:

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



120W(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°C with 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. mm | Permissible overhung load (from end of shaft) | | | | Permissible Load Inertia at the Motor Shaft | |
|------------|------------------|-----------------------------------------------|-----|-------|-----|---------------------------------------------|---------------------------|
| | | 10 mm | | 20 mm | | J (×10 kg. m ²) | GD (kg. m ²) |
| | | lb | N | lb | N | | |
| 5IK | 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 | |
|------------|------------|----------------------------|-----|-----------------------------------------------|-----|-------|-----|-------------------------|-----|
| | | lb-in | N.m | 10 mm | | 20 mm | | 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 | Motor Type | Series | Power | Control | Shaft | | Voltage & Poles | Accessory |
| 2: 60mm | I: Induction | K: k series | 90 = 90W | R: speed control motor | A: round w/ flat | | A: Single phase 100~120VAC, 4P | F: W/Fan |
| 3: 70mm | R: Reversible | | | | A1: round w/keyway | | B: Single phase 100~120VAC, 2P | FF: W/forced Fan |
| 4: 80mm | T: Torque | | | | GN: Normal Pinion | | C: Single phase 220~240VAC, 4P | M: W/Brake |
| 5: 90mm | | | | | GU: Enhanced Pinion | | D: Single phase 220~240VAC, 2P | T: W/Terminal Box |
| 6: 100mm | | | | | | | S: Three phase 220~240VAC, 4P | |
| | | | | | | | T: Three phase 220~240VAC, 2P | |
| | | | | | | | S3: Three phase 380~415VAC, 4P | |
| | | | | | | | T3: Three phase 380~415VAC, 2P | |

● **Product Number Codes for Gearheads:**

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

● **Terminal Boxes:**

