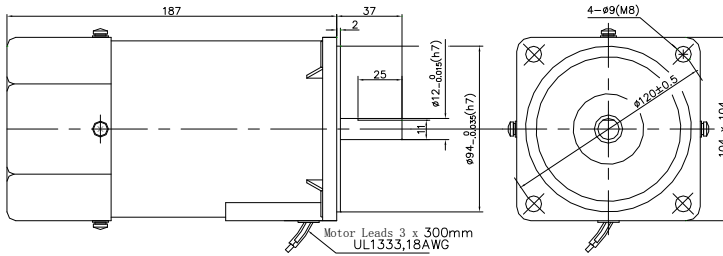


● Motor Dimensions:

# Induction Motors 180W (GU) Frame Size: □104mm (□4.1 in.)



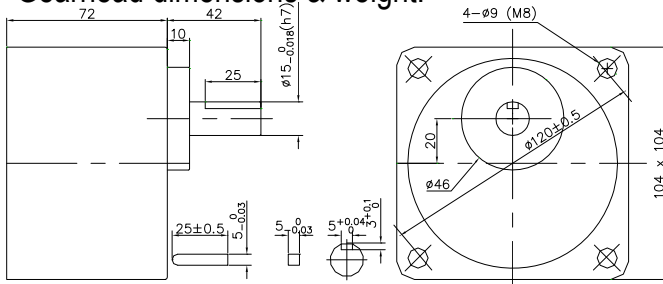
● Induction motor specifications-continuous Rating (leads wire type)



| Model        |             | Output Power | Voltage | Freq. | Current | Starting Torque | Rated Torque | Rated Speed | Capacitor |
|--------------|-------------|--------------|---------|-------|---------|-----------------|--------------|-------------|-----------|
| Pinion Shaft | Round Shaft | W            | Vac     | Hz    | Amp     | mN.m            | mN.m         | r/min       | μF/V      |
| 6IK180GU-AF  | 6IK180A-AF  | 180          | 1ph100  | 50    | 3.2     | 900             | 1385         | 1250        | 45/250    |
|              |             |              |         | 60    | 3.5     |                 | 1120         | 1550        |           |
| 6IK180GU-CF  | 6IK180A-CF  | 180          | 1ph220  | 50    | 1.4     | 1100            | 1385         | 1250        | 12/450    |
|              |             |              | 1ph230  |       | 1.15    |                 | 1450         |             |           |
| 6IK180GU-SF  | 6IK180A-SF  | 180          | 3ph220  | 50    | 1.2     | 3400            | 1385         | 1250        | -         |
|              |             |              |         | 60    | 1       | 2700            | 1120         | 1550        |           |

● 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 (6GUxxK) | 3 - 9    | 72  | 1.87 | 4.11   |  |
|                   | 10~18    |     | 2.10 | 4.62   |  |
|                   | 20 - 200 |     | 2.75 | 6.05   |  |
| Motor             |          | 187 | 4.8  | 10.56  |  |

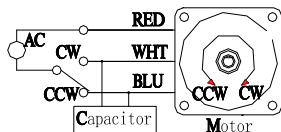
● Gear Motor-Torque Table

| Model                                  | Gear Ratio | X:1  | Efficiency |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |      |     |     |     |     |
|--|------------|------|------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|
|  |            |      | 81         |      |      |      |      | 73   |      |      |      |      | 66   |      |      |     |     |     |     |     |      |     |     |     |     |
|  |            |      | 3          | 3.6  | 5    | 6    | 7.5  | 9    | 12.5 | 15   | 18   | 25   | 30   | 36   | 50   | 60  | 75  | 90  | 100 | 120 | 150  | 180 | 200 |     |     |
| 6IK180GU-A<br>6IK180GU-C<br>6IK180GU-S | 6GU□K      | 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   |     |
| 6IK180GU-A<br>6IK180GU-C<br>6IK180GU-S | 6GU□K      | 50Hz | Nm         | 3.4  | 4    | 5.6  | 6.7  | 8.4  | 10.1 | 12.6 | 15.2 | 18.2 | 22.8 | 27.4 | 32.9 | 40  | 40  | 40  | 40  | 40  | 40   | 40  | 40  | 40  |     |
|  |            |      | Kg.cm      | 34.6 | 40.8 | 57.1 | 68.3 | 85.6 | 103  | 128  | 155  | 185  | 232  | 279  | 335  | 400 | 400 | 400 | 400 | 400 | 400  | 400 | 400 | 400 |     |
|  |            | 60Hz | Nm         | 2.7  | 3.3  | 4.5  | 5.4  | 6.8  | 8.2  | 10.2 | 12.3 | 14.7 | 18.5 | 22.2 | 26.6 | 37  | 40  | 40  | 40  | 40  | 40   | 40  | 40  | 40  | 40  |
|  |            |      | Kg.cm      | 27.5 | 33.6 | 45.9 | 55.1 | 69.3 | 83.6 | 104  | 125  | 150  | 188  | 226  | 271  | 377 | 400 | 400 | 400 | 400 | 400  | 400 | 400 | 400 | 400 |

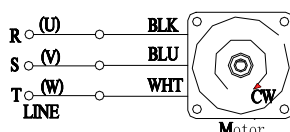
● Enter the gear ratio in the box □. Colored background indicates the output shaft rotate in the same direction as the motor shaft.  
 ● The speed is calculated based on the synchronous speed (50 Hz: 1500rpm; 60Hz: 1800 rpm) by the gear ratio.  
 ● Higher gear ratio (>200) can be achieved by adding a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

● Connection Diagrams:

● Lead Wire Single Phase

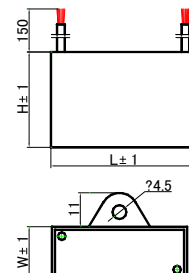


● Lead Wire Three Phase



● Capacitor:

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



# 180W(GU) Frame Size: □104mm (□4.1 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.<br>mm | Permissible overhung load (from end of shaft) |     |       |     | Permissible Load Inertia at the Motor Shaft |                          |
|------------|------------------|---|-----|-------|-----|---|--------------------------|
|            |                  | 10 mm   |     | 20 mm |     | J (×10 kg. m <sup>2</sup> )                 | GD (kg. m <sup>2</sup> ) |
|            |                  | lb  | N   | lb    | N   |   |                          |
| 6IK        | 12               | 71.9  | 320 | 78.7  | 350 | 2   | 8                        |

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    |                         |     |
| 6GU        | 3~200      | 354                        | 40  | 247.2   | 1100 | 337.1 | 1500 | 67                      | 300 |

● **Heat Radiation Plate Dimension (Material: Aluminum) : 230×230 (for 6IK motor)**

● **Product Number Codes for Motors:**

|  |  |                       |                     |                                   |   |   |   |  |
|--|--|-----------------------|---------------------|-----------------------------------|---|---|---|--|
| <b>6</b>   | <b>I</b>   | <b>K</b>              | <b>180</b>          | <b>R</b>                          | <b>GU</b>   | - | <b>C</b>  | <b>F</b>   |
| Frame size<br>2: 60mm<br>3: 70mm<br>4: 80mm<br>5: 90mm<br>6: 100mm | Motor Type<br>I: Induction<br>R: Reversible<br>T: Torque | Series<br>K: k series | Power<br>180 = 180W | Control<br>R: speed control motor | Shaft<br>A: round w/ flat<br>A1: round w/keyway<br>GN: Normal Pinion<br>GU: Enhanced Pinion |   | Voltage & Poles<br>A: Single phase 100~120VAC, 4P<br>B: Single phase 100~120VAC, 2P<br>C: Single phase 220~240VAC, 4P<br>D: Single phase 220~240VAC, 2P<br>S: Three phase 220~240VAC, 4P<br>T: Three phase 220~240VAC, 2P<br>S3: Three phase 380~415VAC, 4P<br>T3: Three phase 380~415VAC, 2P | Accessory<br>F: W/Fan<br>FF: W/forced Fan<br>M: W/Brake<br>T: W/Terminal Box |

● **Product Number Codes for Gearheads:**

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

● **Terminal Boxes:**

