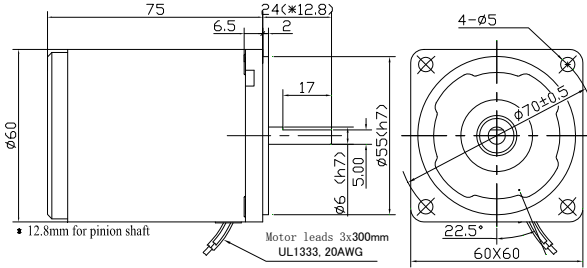


Torque Motors

Frame Size: □60mm (□2.36 in.)

● Motor Dimensions:

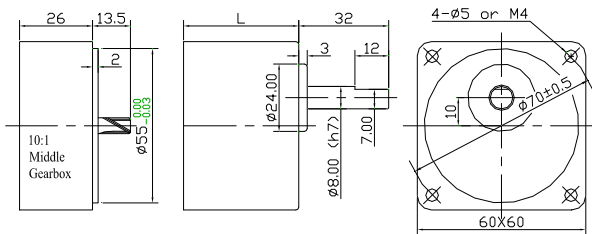


● Torque motor specifications (leads wire type)

Model		Rating	Voltage	Freq.	Starting Torque	Max. output power	At Max. output power		Capacitor
Pinion Shaft	Round Shaft						Speed	Torque	
2TK3GN-A	2TK3A-A	5MIN	110	50	69	3.2	750	41	7.0/250
		Cont	60		25	1.3		16	
		5MIN	110	60	69	3.2	900	37	
		Cont	60		25	1.3		11	
2TK3GN-C	2TK3A-C	5MIN	220	50	69	3.2	750	41	1.5/450
		Cont	140		25	1.2		16	
		5MIN	220	60	69	3.2	900	37	
		Cont	140		25	1.2		11	

● 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.

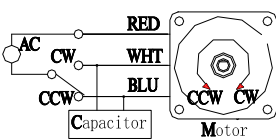
● Gearhead dimensions:



Item	Ratio	Eff. %	L mm	Weight	
				Kg	lb
Gearhead (2GNxxK)	3,3,6,5,6,7,5,9,12,5,15,18	81	32	0.24	0.53
	25,30,36	73	42	0.3	0.66
	50,60,75,90,100,120,150,180,200	66	42	0.33	0.73
10:1 middle gearbox		90	26	0.2	0.44
Motor			75	0.7	1.54

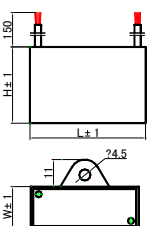
● Connection Diagrams:

● Lead Wire Single Phase

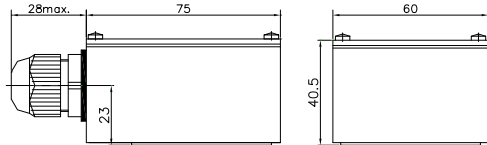


● Capacitor:

Value	Dimensions	Dimensions		
		uF	V	L H W
2.0 - 2.5	250	37	14	28
0.5 - 1.5	450	37	18	28
3.5 - 4.0	250	37	18	28
1.8 - 2.5	450	37	18	28



● Terminal Boxes:



● General specifications for AC motors (motor operated under normal ambient temperature and humidity conditions):

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

● 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. m²)	GD (kg. m²)		
□60	6 mm	11.2 Lb	50 N	18 lb	80 N	0.062	0.25

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				
2GNxxK	3 - 18	26 lb-in	3 N.m	11.2 lb	50 N	18 lb	80 N	6.7 lb	30 N
	25 - 200			27 lb	120 N	40 lb	180 N		