



Sesame Motor Corp., A leading brand in gear technology.

MOTOR AND SPEED REDUCER



100%

Made in Taiwan

www.sesamemotor.com



Applications

Applications of Planetary Gearhead

Machine Tools

Metal Cutting Machines, Machining Centers, CNC Drilling Machines, Lathes and Turning Machines, Milling and Boring Machines, Grinding Machines, Drilling Machines, Planning Machines, Metal Forming Machine Tools, Presses, Tube and Wire Processing Machines.

Industry Machinery

Packaging Machinery, Food and Beverage Processing Machinery, Bakery Equipment, Agricultural Machinery, Textile Machinery, Shoemaking Machinery, Wood Working Machinery, Printing Machinery, Plastic processing Machinery, Laser Cutting and Welding Machines.

Automation Equipment

Industrial Robots, Semiconductor Devices, Automatic Storage System, Surface Treatment Equipments.

Aerospace Industry

Medical and Rehabilitation Equipment

Electric Scooter

Green Energy-Related Industries

Testing Devices

Automation and Precise Positioning Equipment with Servo Motors

Motor and Reducer

- Machine Tool Accessories • Cutting Equipment • Bar Feeder
- Gilding Machine • Conveyor Equipment • Food Machine
- Screen Printing • Agricultural Machinery • Medical Equipment

Gear Motor and Reducer

- Machine Tool Accessories • Cutting Equipment • Bar Feeder
- Gilding Machine • Conveyor Equipment • Food Machine
- Screen Printing • Agricultural Machinery • Medical Equipment



MOTOR TERM BRIEF INTRODUCTION

Rating

Motor rating is the maximum allowance based on its temperature rising and loading. The Rating is including output, voltage, frequency, current, torque, speed and other related value. It can be classified continuously and short-time rating according to temperature limitation.

Continuously & Short-time Rating

Time rating is defined via the motor works continuously with certain loading in ambient temperature 40°C and the motor temperature itself does not exceed the safe limit. Continuously rating means the motor can be operated continuously. Short-time rating means the motor can be operated within specified time interval only. Short-time rating motor with interval operation runs longer because of the thermal diffusion effects.

Rated Output

Rated output means the motor works in a defined period of time with maximum loading and the motor temperature itself does not exceed the safe limit. For example, a 10HP continuous rating motor can be used as a 12HP or 13HP motor via the short-time rating usage. Thus it is marked rated output only. The RPM and torque under rated output formulation are justified as rated RPM and rated torque. The most suitable performance of motor is available only when the motor works in rated condition.

$$\text{Output} = 1.027 \cdot N \cdot T$$

$$1\text{HP} = 746 \text{ Watt}$$

1.027: Constant

N: Speed (RPM)

T: Torque (Kg · m)

Starting Torque (see graph)

The torque produced by the motor when starting is called starting torque. The motor does not work if loading is larger than the starting torque.

Maximum Torque (see graph)

The maximum torque is the most torque output of the motor under specified voltage and frequency. If the additional loading is larger than the maximum torque when the motor is running, the motor will stop immediately.

Rated Torque (see graph)

The torque produced by the motor at rated output under specified voltage and frequency is rated torque. It is also the torque at rated speed.

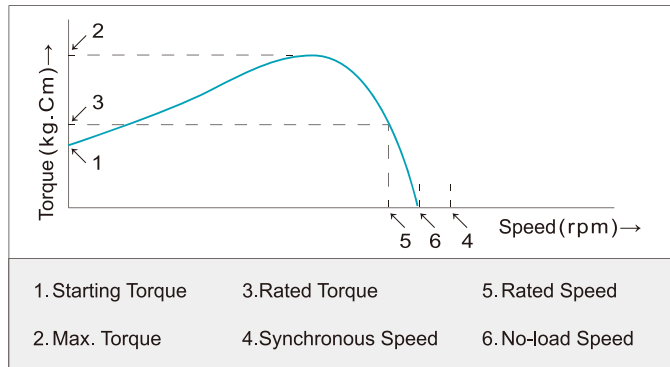
Rated Speed (see graph)

The measured speed of the motor at rated output.

Motor Ingress Protection Rating

Model	Rating	Explanation
Wire Type	IP22	Prevent against object diameter > 12mm such as fingers Prevent against dripping water when tilted up to 15°
Terminal Box Type	IP54	Prevent against dust and it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment. Water splashing against the enclosure from any direction.

Speed vs. Torque Graph



Synchronous Speed (see graph)

Motor pole and power frequency will determine the speed. In general the unit is revolutions per minute (rpm). The calculation formula is:

$$N_s = \frac{120 \cdot f}{P}$$

N_s : Synchronous Speed
 120 : Constant
 f : Hertz (Hz)
 P : Motor Pole

Example: A 4-pole motor at 60 Hz, its synchronous speed is 1800 rpm.

No-load Speed (see graph)

Motor speed under zero load is called no-load speed. Because of slip ratio, the speed of induction motor and reversible motor will be less than their synchronous speed (approx. 20 ~ 60 rpm less).

Slip Ratio

An indication of motor speed.

$$S = \frac{N_s - N}{N_s}$$

S : Slip Ratio
 N_s : Synchronous Speed (rpm)
 N : Designated Load Speed (rpm)

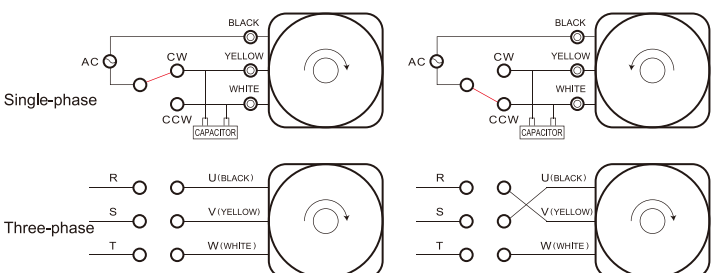
Example: If a 4-pole motor at 50 Hz pulling an object, its slip ratio is 0.1, then the motor speed is 1350 rpm.

$$N = \frac{120 \times 50}{4} (1 - 0.1) = 1500 \times 0.9 = 1350 \text{ rpm}$$

Overrun

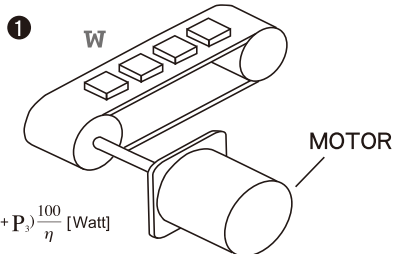
Overrun is the additional rotation after the power is turned off. It is indicated by turns or degree.

Wiring Diagram



POWER OUTPUT CALCULATION

Belt Conveyor



$$P_g = (P_1 + P_2 + P_3) \frac{100}{\eta} \text{ [Watt]}$$

No-load :

$$P_1 = 9.8\mu wvL \text{ [Watt]}$$

Horizontal :

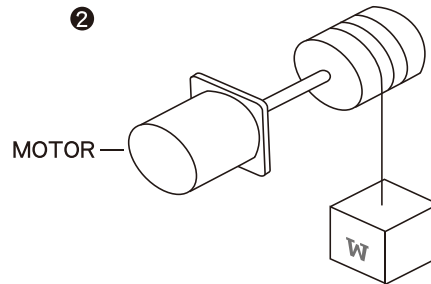
$$P_2 = \frac{\mu QL}{367} \text{ [Watt]}$$

Vertical :

$$P_3 = \pm \frac{QH}{367} \text{ [Watt]}$$

- L : Length of conveyor(m)
- W : Weight of belt in unit length(kgf/m)
- μ : Friction coefficient
- V : Belt speed(m/sec)
- Q : Quantity(kgf/h)
- η : Efficiency(%)
- H : Height difference between two ends of belt(m)

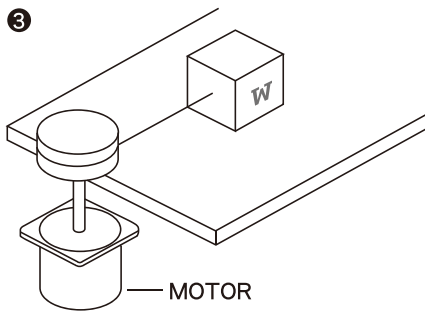
Winding Up a Load



$$P_g = \frac{wv}{6.12} \cdot \frac{100}{\eta} \text{ [Watt]}$$

- W : Weight of belt in unit length(kgf/m)
- V : Belt speed(m/sec)
- η : Efficiency(%)

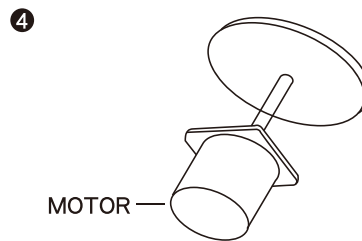
Horizontal Movement



$$P_g = \frac{wvV}{6.12} \text{ [Watt]}$$

- W : Weight of belt in unit length(kgf/m)
- μ : Friction coefficient
- V : Belt speed(m/sec)

Driving of an Inertia Object



$$P_g = 1.027NT \text{ [Watt]}$$

$$T \approx \frac{GD^2}{375} \cdot \frac{N}{t} \text{ [kgf-m]}$$

- N : Revolutions per minute (rpm)
- T : Torque(kgf . m)
- GD² : Flywheel effect with rotor(kgf . m²)
- t : Starting time(sec)

General Spec of Motor

Insulation Resistance	Test value above 100MΩ by DC500V hi-resistance meter at coil and housing after rated running at constant temperature and humidity.
Insulation Endurance	Hi-pot test by 60Hz 1.8KV for one minuate at coil and housing without damage after rated running at constant temperature and humidity.
Temperature Rise	Temperature rise below 75 °C after rated running.
Ambient Temperature Range	-10 °C ~ +50 °C (motor with capacitor -10 °C ~ +40 °C)
Insulation Class	E Class (120 °C)

CHOOSING A SUITABLE MOTOR

AC SMALL GEAR - SPEED REDUCED, VARIABLE SPEED, BRAKE MOTOR

AC MOTOR				
VARIABLE SPEED	MODEL	Variable Speed Brake Motor	Reversible Variable Speed Motor	Variable Speed Induction Motor
	TURNING DIRECTION	Forward or Reverse	Frequent Forward/ Reverse	Single Direction
	BRAKE & HOLDING FORCE	Magnetic Brake & Holding Force	Minor Holding Force	No Holding Force
	POWER SOURCE/ OUTPUT	1 PHASE / 25W-90W <ul style="list-style-type: none"> • A closed-circuit control system with motor and generator combined. • Wide range of speed. • Simple speed control, easy wiring. • Magnetic safety brake, great holding force. 	1 PHASE / 6W-60W <ul style="list-style-type: none"> • A closed-circuit control system with motor and generator combined. • Wide range of speed. • Simple speed control, easy wiring. • Built-in easy brake function. • Frequent forward & reverse. 	1 PHASE / 6W-90W <ul style="list-style-type: none"> • A closed-circuit control system with motor and generator combined. • Wide range of speed. • Simple speed control, easy wiring.
CONSTANT SPEED	MODEL	Brake Motor	Reversible Motor	Induction Motor
	TURNING DIRECTION	Forward or Reverse	Frequent Forward/ Reverse	Single Direction
	BRAKE & HOLDING FORCE	Magnetic Brake & Holding Force	Minor Holding Force	No Holding Force
	POWER SOURCE/ OUTPUT	1 PHASE / 25W-90W <ul style="list-style-type: none"> • Magnetic safety brake, great holding force. • Various models. 3 PHASE / 25W-90W <ul style="list-style-type: none"> • Magnetic safety brake, great holding force. • Various models. 	1 PHASE / 6W-60W <ul style="list-style-type: none"> • Rated 30 mins. • $\frac{\text{Starting torque}}{\text{Rated torque}} = 0.8\sim 1.0$ • Easy to switch directions. • Built-in easy brake system, minimized over run. 	1 PHASE / 6W-90W <ul style="list-style-type: none"> • Continuous rating. • For general purposes • Multi-applications. • $\frac{\text{Starting torque}}{\text{Rated torque}} = 0.7\sim 0.9$ • Various models. 3 PHASE / 25W-90W <ul style="list-style-type: none"> • High power, high efficiency. • Suitable for industrial machinery.

★ Specifications subject to change without prior notice. ★ Products with UL certification will be marked "UL" on the nameplates.

PRODUCT NAME CODING SYSTEM

● INDUCTION MOTOR

4 I K 25 C GN - A M

ACCESSORIES

F: Fan M: Magnetic Brake
 P: Thermo Switch
 T: Terminal Box
 Ts: Small Box(87L x 59W x 43Hmm)
 TL: Large Box(132L x 55W x 50Hmm)
 FF: Forced Fan

VOLT/ POLE

A: 1ø110V/4P B: 1ø110V/2P C: 1ø220V/4P
 D: 1ø220V/2P CE: 230V~240V (50HZ)/ 4P
 S: 3ø220V/4P T: 3ø220V/2P U: 3ø380V/4P V: 3ø380V/2P

SHAFT SHAPE

A: Round (Smooth) GN: Helical Gear
 GX: Helical Gear
 SW: Worm Gear
 (For Clutch Brake Motor)
 GK: Spur Gear Shaft GS: Spur Gear Shaft
 (GS/GX for 60W/90W Only)

C: Torque Motor Assembled with Controller
 R: Variable Speed

OUTPUT

6: 6W 15: 15W 25: 25W 40: 40W 60: 60W 90: 90W

MOTOR SERIES

K: K Series

TYPE

I: Induction R: Reversible
 T: Torque (Controller is Separated from Torque Motor)

SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

PRODUCT NAME CODING SYSTEM

ASSEMBLED TYPE VARIABLE SPEED MOTOR



Assembled type variable speed motor works with assembled type speed controller. For example, variable speed motor M206-001 works with speed controller US206-01.

VOLTAGE

1: 1ø110V 2: 1ø220V
2E: 1ø240V/50 Hz

MOTOR TYPE

0: Induction 1: Reversible

OUTPUT SHAFT SHAPE

0: Round Shaft
4: GN Helical Type
6: GX Helical Type
7: SW Worm Gear Shaft

OUTPUT

6: 6W 15: 15W 25: 25W 40: 40W 60: 60W 90: 90W

SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

MODEL

M: Motor

PRODUCT NAME CODING SYSTEM

ASSEMBLED TYPE SPEED CONTROLLER

US **4** **25** - **0** **1** - **D** - **1**

Assembled type speed controller works with assembled type variable speed motor. For example, US206-01-D-1 speed controller works with M206-001 variable speed motor.

EXTENDED CABLE

1: 1m 2: 2m 3: 3m

DISPLAY TYPE

D: Digital Display Type
: Standard Type

VOLTAGE

1: 1ø110V 2: 1ø220V 2E: 1ø240V/50 Hz

MOTOR TYPE

0: Induction 1: Reversible

OUTPUT

6: 6W 15: 15W 25: 25W 40: 40W 60: 60W 90: 90W

SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

MODEL

US: Assembled Type Speed Controller

PRODUCT NAME CODING SYSTEM

SPEED REDUCER



ADD. SPECS

H: Heavy Duty **B:** Medium Loading
BH: Heavy Duty Square Flange
 BH \ H \ B are only available with 90mm frame size.

BEARING TYPE

Precision Type:
KE: Ball Bearing
BE: Used For Both Self-Oiling Bearing and Ball Bearing
 General Type:
K: Ball Bearing : Self-Oiling Bearing

SPEED RATIO

100: 1/100 1/3 ~ 1/180 **10X:** Intermediate Speed Reducer

GEAR TYPE

GN: Helical Gear **GX:** Helical Gear
 GB series is suitable for BLDC motor.

SIZE

2: 60mm **3:** 70mm **4:** 80mm **5:** 90mm

PRODUCT NAME CODING SYSTEM

SEPARATED TYPE SPEED CONTROLLER

S S 3 2 - HR

ADD. SPECS

HR: High-responsive(for 31/32 Types only)

VOLTAGE

1: 1ø110V 2: 1ø220V

MAXIMUM CURRENT

2: 2A 3: 3A

TYPE

Speed Controller

MODEL

Separated Type

ELECTRONIC INSTANT BRAKE

SB 3 2 S - IN

FEATURES

IN: Inch Movement

PHASE

S: 3ø, 1ø (The Field N/A For Single Phase)

VOLTAGE

1: 110V 2: 220V

CURRENT

3: 3A

MODEL

Electronic Brake

INDUCTION MOTOR & SPEED REDUCER INSTALLATION MANUAL

1.Attention

1.1 Install preparation

- Please read this operation manual before using this motors. Any problems caused by inappropriate operation contrary with the manual, or damage caused by natural disasters, or restructure without our permission, Sesame will not take any responsibility nor will the motor / speed reducer be covered by warranty.
- Warranty is within one year after purchase. Within warranty period, if motor / speed reducer damage is not caused by operation error or by natural disaster, then please send back the product, we should replace the damaged spare part at free of charge.
- Before Installation, ensure correct voltage can be applied to motor.
- Do not bend the lead wires.
- Installation should be proceeded by trained technicians only.
- Please wire motor correctly according to the manual to prevent fire or electrical shock.
- Do not attempt to disassemble or modify the motor to prevent electrical shock or injury.

1.2 Installation Conditions

The conditions below must be fulfilled to avoid any motor damage, which is not covered under warranty.

- The motor was designed to be installed on the other facilities/applications.
- Do not expose the motor to flammable or corrosive gas.
- Indoor application only. Room temperature should be maintained between -10~50°C (-10~40°C for motor with capacitor)
- The air humidity should not exceed 85%.
- The altitude of where the motor was installed should not exceed 1000 meter above the sea level.
- Do not expose the motor to the sunshine directly. Dust and spray of oil/water is also forbidden.
- Avoid any continuous vibration or impact on the motor.
- Ensure the motor was installed in a well ventilated location.

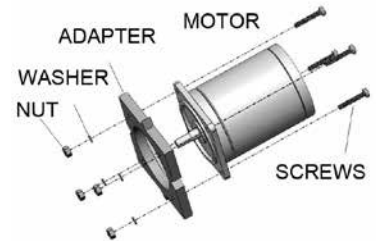
1.3 Preparation of start up

- Please check the power supply before starting the motor.
- High temperature might cause the coil and bearing failed earlier.
- Do not connect the motor with inverter.
- Motor might be broken if wrong wiring or overloaded.

2.Installation

2.1 Round shaft model

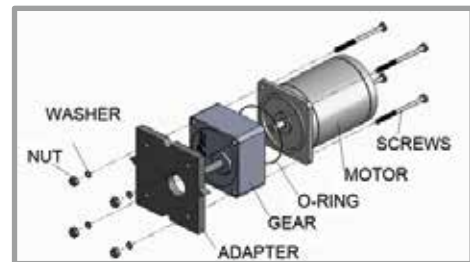
- Mount the motor on the adapt plate by screws. Make sure the motor and the adapter were tightly mounted. (Note that screws for connecting motor and machine were not included)
- Please note that there should be no gap between motor and adapt plate.



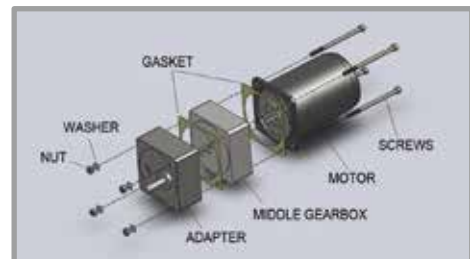
Flange dim \square :	Screw	Tightening torque
60mm	M4	2.0 N · m
70mm	M5	2.5 N · m
80mm	M5	2.5 N · m
90mm	M6	3.0 N · m

2.2 Gear shaft model

Install motor and speed reducer by turning speed reducer left and right when gently inserting motor gear shaft into speed reducer until no gap between the mounting surfaces. Insert the screws and tighten them. No hammer or force is allowed.



★O-rings are necessary for some specific models. Please install accordingly.



★Gaskets are required when installing intermediate speed reducer.

⚠ Attention

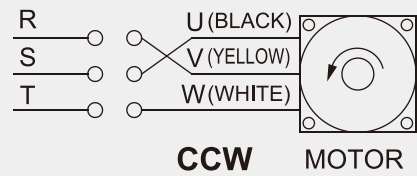
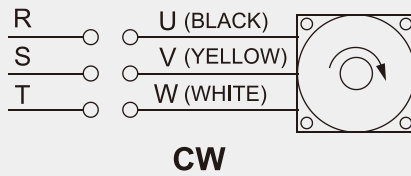
- Metal chips/unconfirmed substance left inside speed reducer or incorrect installation will damage gears and results in abnormal noise, short lifespan or accident. Please be alert.
- Installation is available only when speed reducer and motor output shaft have the same gear type. Please confirm the specification of both products before installation.
- Specification compatibility check is required before applying both products to other machinery or equipment.
- Sesame Motor Corp. is not responsible for any cause there might occur if user's neglects of specification compatibility checking.

3. Wiring Diagrams

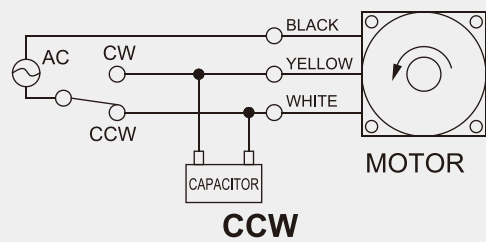
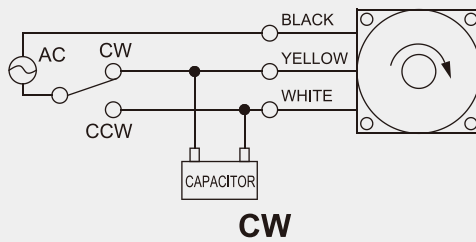
- The motor rotating direction was defined by looking toward the output shaft. In the forward direction for CW, reversed direction for CCW.
- 1 phase motor rotating direction change is available by switching wiring to CW. or CCW.
- 3 phases motor rotating direction change is available by switching any two wires of U, V, and W.

3.1 Induction / reversible motor

3.1.1 3 phases



3.1.2 1 phase

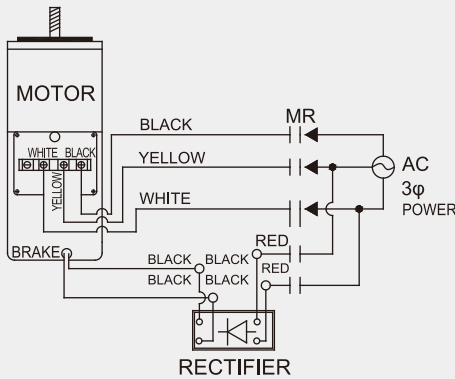


3.2 Brake motor

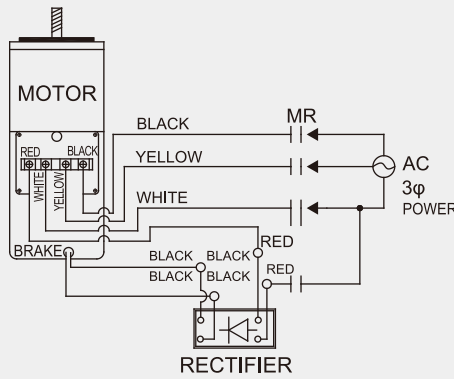


- ▶ The lining clearance will bigger than 0,3-0,35mm after a period of usage, please contact us to replace the lining.
- ▶ Isolating wiring is required when frequent braking condition.
- ▶ Brake frequency limit 10 times per minute.

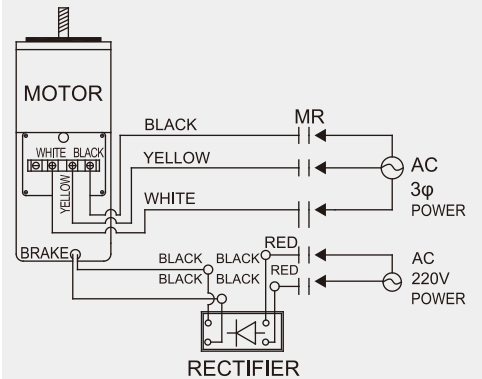
3.2.1 3 phases brake motor with terminal box. (220V / IP54)



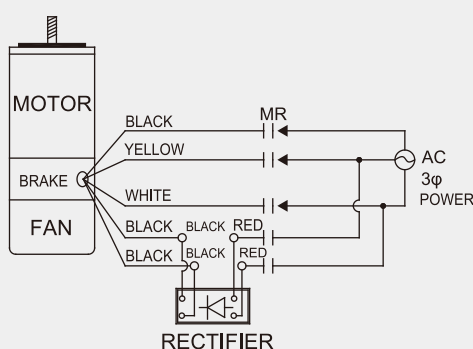
3.2.2 3 phases brake motor with terminal box. (380V~460V / IP54)



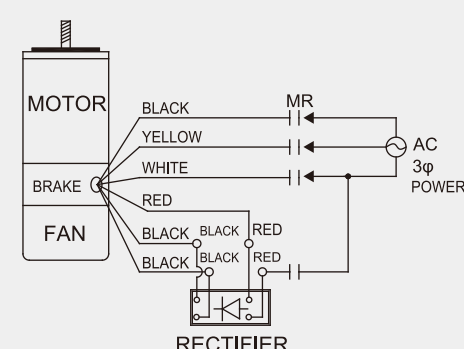
3.2.3 3 phases brake motor with terminal box. (460V~600V / IP54)



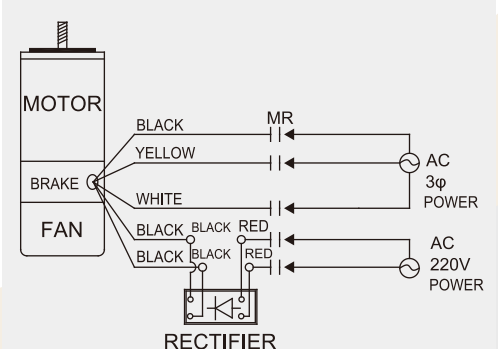
3.2.4 3 phases brake motor (220V / IP22)



3.2.5 3 phases brake motor (380V~460V / IP22)

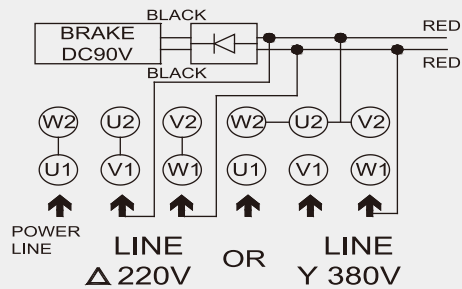


3.2.6 3 phases brake motor (460V~600V / IP22)

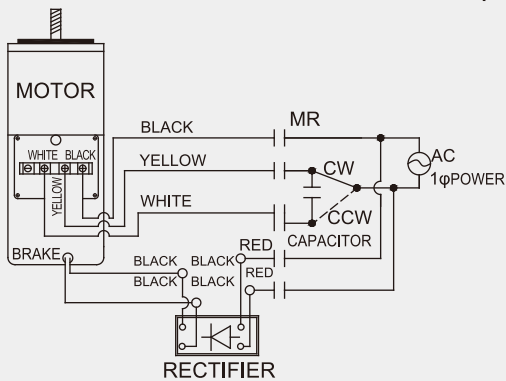


3. Wiring Diagrams

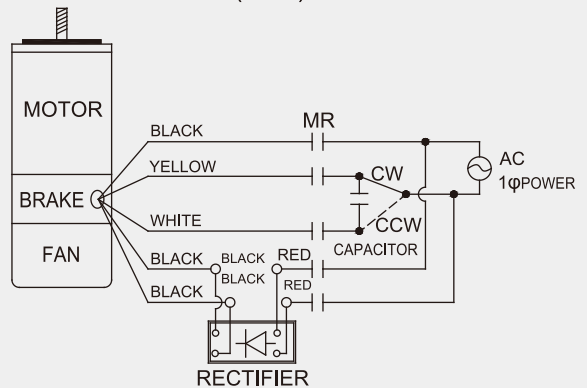
3.27
3 phases brake motor (dual voltage)



3.28
1 phases brake motor with terminal box (IP54)



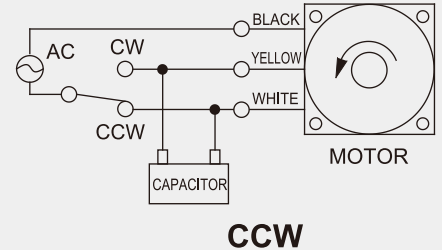
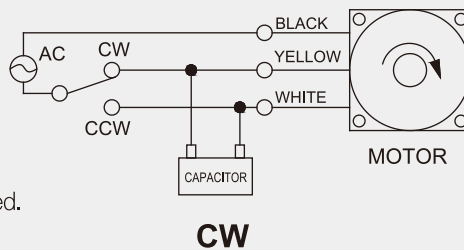
3.29
1 phases brake motor (IP22)



3.3 Torque motor

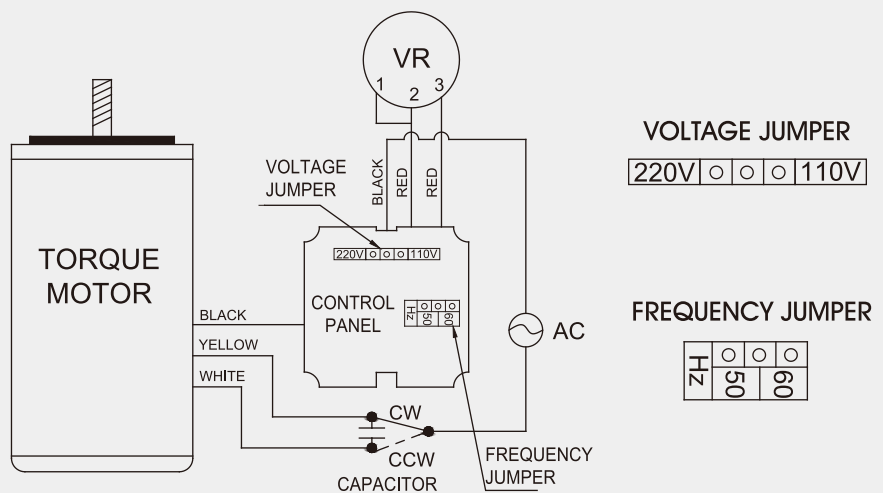
3.31 Standard type

- Motor rotating direction change is available by switching wiring to CW. or CCW.
- To adjust speed and torque, an external voltage regulator is needed.



3.32 Terminal box type

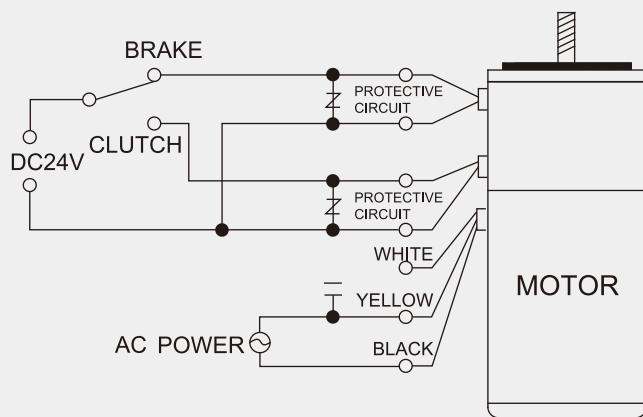
- Voltage regulator is installed in terminal box. Motor speed adjust is available by attached speed controller.



Attention Before operate terminal type torque motor, please make sure correct voltage and frequency jumper on the control panel to prevent motor burning down.

3.4 Clutch brake motor

- The power supply for motor (AC) and clutch brake (DC24V) must be separated.
- The output shaft keeps rotating when switch to clutch side after power supplied. As the switch is on the brake side, the brake will stop shaft rotation and keep great holding force.
- DC power off will release the brake and hence the output shaft rotates freely.



4. Installation of Capacitor (Single Phase Motor Only)

- Ensure the capacitor matches the specification of the motor before installation.
- Install the capacitor with M4 screws (not included).
- Capacitor should be installed inside the electrical box or IP54 rated box to avoid electric shock.



Attention

- ▶ To avoid damaging on the mounting foot, the screws tightening torque should not exceed 1 N.m.
- ▶ Install capacitor at least 10 cm away from motor to prevent heat damage to capacitor.
- ▶ Connect one wire in one terminal only.

5. Thermally Protected Motor Precaution

- Single phase thermally protected motor will restart automatically when motor temperature falls below a certain level. Always turn off the power before conducting checks or performing work on the motor.
- Thermal switch of three phases motor is installed with two red wires. Please connect two red wires to control system. Thermally protected motor will restart automatically when motor temperature falls below a certain level. Always turn off the power before conducting checks or performing work on the motor.

6. Trouble Shooting Guides

Please check the motor according to procedures below if abnormal situation.

- The motor does not work or the speed cannot be raised.
 - Check if the power supply fits the motor specification?
 - Confirm if the power supply is correctly connected?
 - Confirm if the motor is overloaded?
 - Confirm if the wires are poor connected when using crimping terminal or terminal block?
 - Confirm if the capacitor is well installed?
- The motor is over heated
 - Check if the power supply fits the motor specification?
 - Check if the room temperature is under the requirement ($< 40^{\circ}\text{C}$)?
 - Confirm if the capacitor specification is correct?
- Noise
 - Check if the motor was blocked?
 - Check if a phase failure occurs?
 - Check if brake well functioning?
 - Check if the fan loosens?
- If the problem could not be solved via the procedures above, please DO NOT take apart the products, contact Sesame for technical support.

BRAKE MOTOR

CONSTRUCTION (POWER-OFF BRAKE TYPE)

Our brake motor is an excitation type motor. Once voltage is introduced into the coil, the magnet working against the spring will hold the moving plate, releasing the brake, and allowing the motor shaft to move freely.

INSULATION RESISTANCE

Tested value at $10M\Omega$ and above, measured by DC 500V Hi-Resistance meter between the coil and housing.

HI-POT RESISTANCE

No damages caused after 1kV at 60Hz was tested for one minute between the coil and housing.



ADJUSTMENT OF THE BRAKE CLEARANCE

Brake clearance is the gap between magnetic coils and moving plate. The ideal pre-setting is 0.15mm (around the thickness of a name card). After a period of usage, the clearance is widened due to lining friction and wear. If the clearance is bigger than 0.3mm, please contact us or replace the lining.

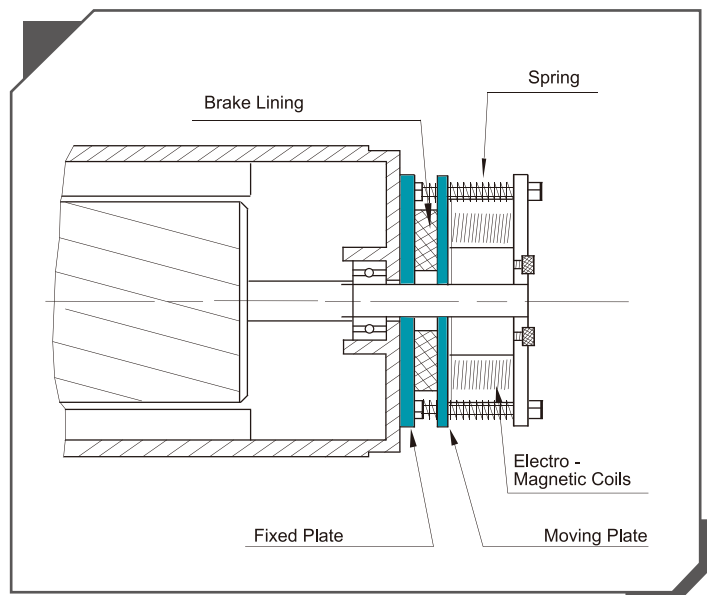
FEATURES

HIGH BRAKING & HOLDING FORCE

Built-in excitation brake: as the power is shut off, it can stop the motor instantly and accurately holds the load, making it most suitable for emergency braking.

BRAKE PRECISION

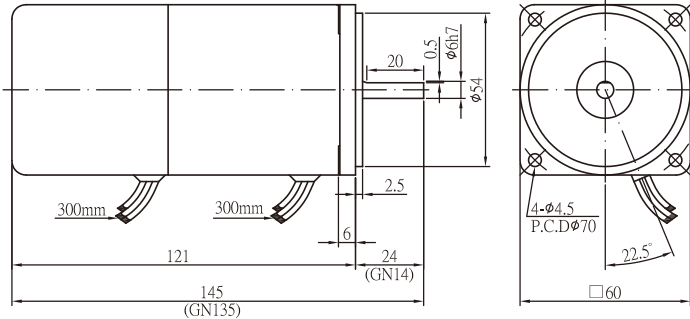
Regardless of rpm, the magnetic brake can control the overturns within 2-3 turns, making it suitable for frequent forward/reverse operation.



Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

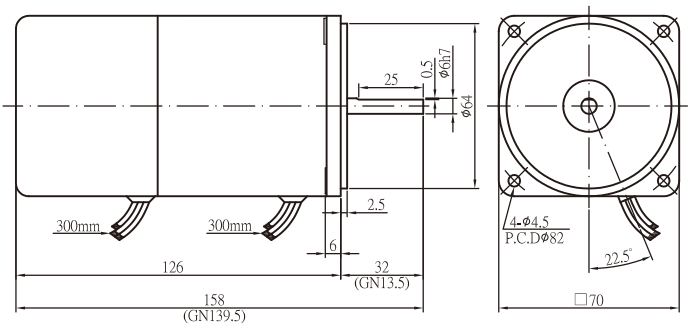
ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR -IP22

■ OUTLINE & SPECIFICATION
■ UNIT : mm



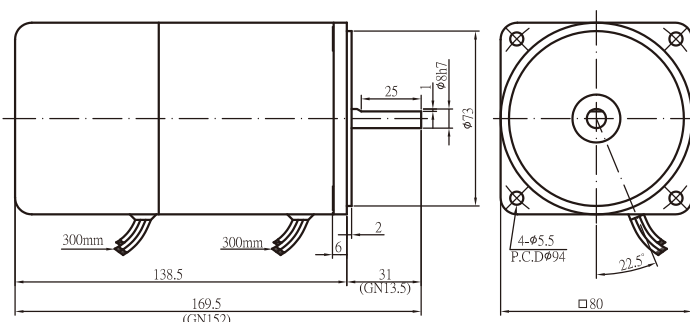
6W

6W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
2IK6A(GN)-AM	6	1ø100/110	50/60	4	1150/1400	30 /minutes	0.7/0.63	0.5/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-CM	6	1ø200/220	50/60	4	1150/1550	30 /minutes	0.65/0.7	0.51/0.54	0.1/0.11	0.7/450V
2IK6A(GN)-CEM	6	1ø230/240	50	4	1100/1200	30 /minutes	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W

15W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
3IK15A(GN)-AM	15	1ø100/110	50/60	4	1150/1650	30 /minutes	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-CM	15	1ø200/220	50/60	4	1150/1600	30 /minutes	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CEM	15	1ø230/240	50	4	1300/1300	30 /minutes	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W

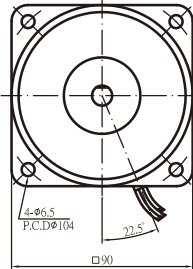
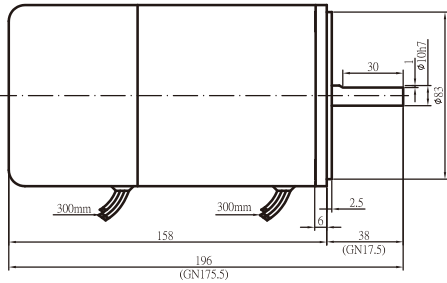
25W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
4IK25A(GN)-AM	25	1ø100/110	50/60	4	1250/1600	30 /minutes	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-CM	25	1ø200/220	50/60	4	1250/1600	30 /minutes	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CEM	25	1ø230/240	50	4	1300/1300	30 /minutes	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-SM	25	3ø220	50/60	4	1300/1550	30 /minutes	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-UM	25	3ø380	50/60	4	1200/1350	30 /minutes	3.96/2.97	2.04/1.79	0.11/0.11	-

NOTES :

1. The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
2. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

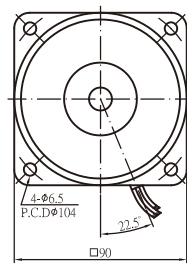
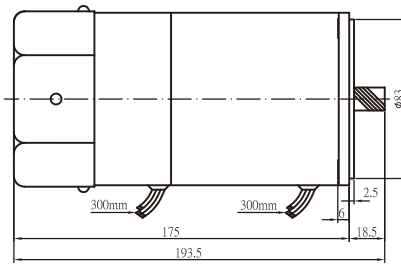
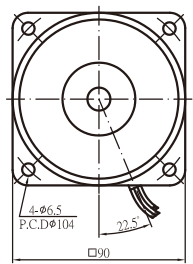
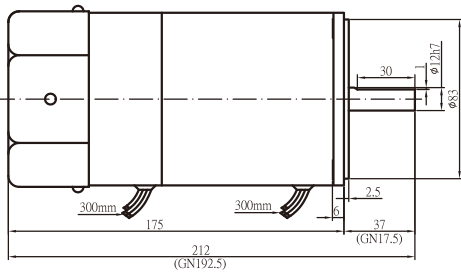
ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR -IP22

■ OUTLINE & SPECIFICATION
 ■ UNIT : mm



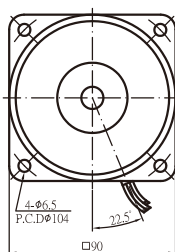
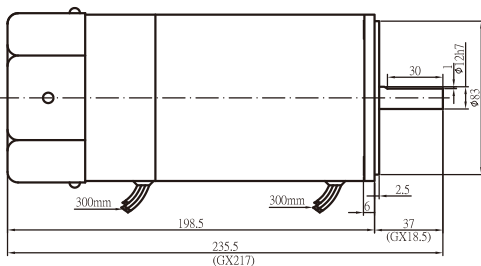
40W

40W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK40A(GN)-AM	40	1ø100/110	50/60	4	1250/1600	30 /minutes	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-CM	40	1ø200/220	50/60	4	1300/1650	30 /minutes	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CEM	40	1ø230/240	50	4	1350/1350	30 /minutes	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-SM	40	3ø220	50/60	4	1400/1600	30 /minutes	10.51/7.83	2.83/2.4	0.32/0.28	-
5IK40A(GN)-UM	40	3ø380	50/60	4	1350/1600	30 /minutes	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/60W-GX

60W/60W-GX MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK60GX-AFM	60	1ø100/110	50/60	4	1200/1650	30 /minutes	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN)-AFM										
5IK60GX-CFM	60	1ø200/220	50/60	4	1250/1600	30 /minutes	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN)-CFM										
5IK60GX-CEFM	60	1ø230/240	50	4	1300/1350	30 /minutes	4.14/5.22	4.56/4.4	0.56/0.55	4/450V
5IK60A(GN)-CEFM										
5IK60GX-SFM	60	3ø220	50/60	4	1300/1550	30 /minutes	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN)-SFM										
5IK60GX-UFM	60	3ø380	50/60	4	1400/1550	30 /minutes	14.33/10.15	4.2/3.79	0.21/0.22	-
5IK60A(GN)-UFM										



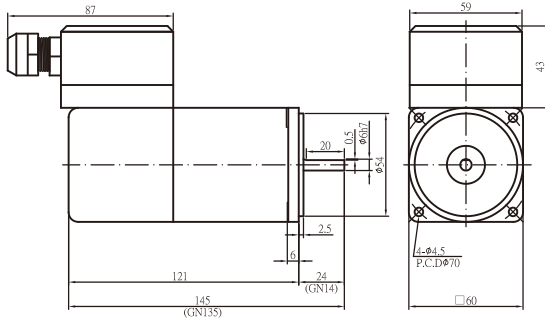
90W

90W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK90A(GX)-AFM	90	1ø100/110	50/60	4	1300/1650	30 /minutes	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CFM	90	1ø200/220	50/60	4	1300/1650	30 /minutes	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90A(GX)-CEFM	90	1ø230/240	50	4	1350/1350	30 /minutes	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SFM	90	3ø220	50/60	4	1400/1650	30 /minutes	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UFM	90	3ø380	50/60	4	1400/1650	30 /minutes	23.3/18.14	6.27/5.23	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

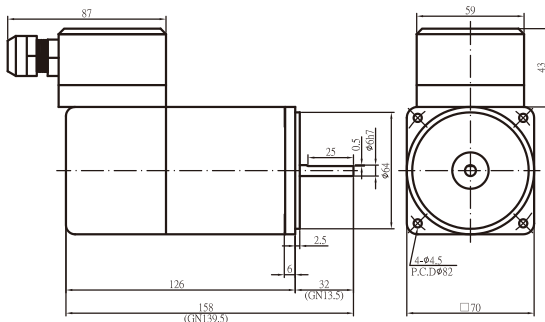
ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR, TERMINAL BOX TYPE -IP54

■ OUTLINE & SPECIFICATION
■ UNIT : mm



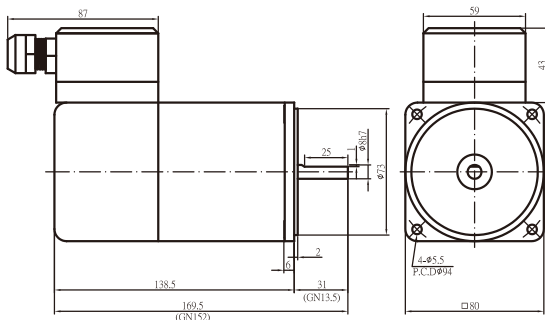
6W

6W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
2IK6A(GN)-AMT	6	1ø100/110	50/60	4	1150/1400	30 /minutes	0.7/0.63	0.51/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-CMT	6	1ø200/220	50/60	4	1150/1550	30 /minutes	0.65/0.7	0.51/0.54	0.1/0.11	0.7/450V
2IK6A(GN)-CEMT	6	1ø230/240	50	4	1100/1200	30 /minutes	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W

15W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
3IK15A(GN)-AMT	15	1ø100/110	50/60	4	1150/1650	30 /minutes	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-CMT	15	1ø200/220	50/60	4	1150/1600	30 /minutes	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CEMT	15	1ø230/240	50	4	1300/1300	30 /minutes	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W

25W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
4IK25A(GN)-AMT	25	1ø100/110	50/60	4	1250/1600	30 /minutes	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-CMT	25	1ø200/220	50/60	4	1250/1600	30 /minutes	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CEMT	25	1ø230/240	50	4	1300/1300	30 /minutes	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-SMT	25	3ø220	50/60	4	1300/1550	30 /minutes	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-UMT	25	3ø380	50/60	4	1200/1350	30 /minutes	3.96/2.97	2.04/1.79	0.11/0.11	-

NOTES :

1. The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
2. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

GENERAL PURPOSE MOTOR

SPEED CONTROLLED MOTOR

CONTROLLER

BRAKE MOTOR

CLUTCH BRAKE MOTOR

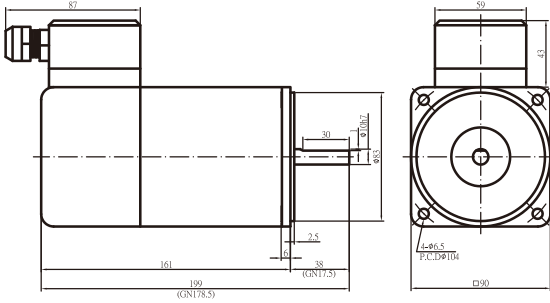
TORQUE MOTOR

SPEED REDUCER

COMPONENTS

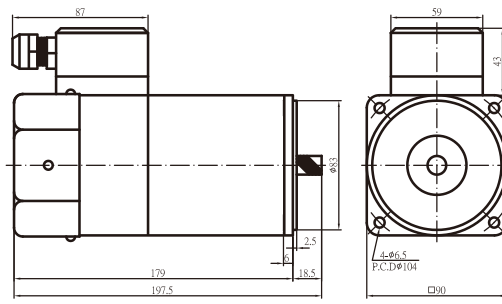
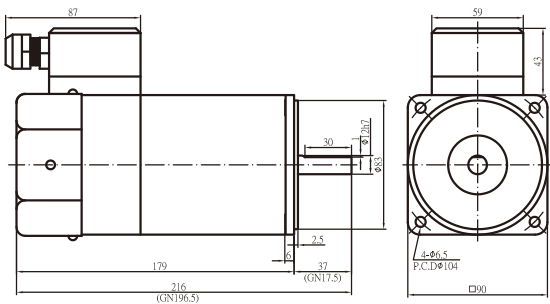
ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR, TERMINAL BOX TYPE -IP54

■ OUTLINE & SPECIFICATION
 ■ UNIT : mm



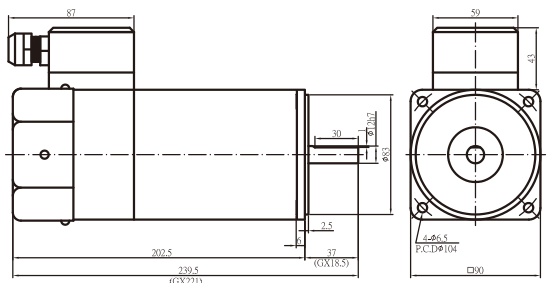
40W

40W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK40A(GN)-AMT	40	1φ100/110	50/60	4	1250/1600	30 /minutes	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-CMT	40	1φ200/220	50/60	4	1300/1650	30 /minutes	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CEMT	40	1φ230/240	50	4	1350/1350	30 /minutes	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-SMT	40	3φ220	50/60	4	1400/1600	30 /minutes	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40A(GN)-UMT	40	3φ380	50/60	4	1350/1600	30 /minutes	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/60W-GX

60W/60W-GX MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK60A(GN)-AFMT 5IK60GX-AFMT	60	1φ100/110	50/60	4	1200/1650	30 /minutes	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN)-CFMT 5IK60GX-CFMT	60	1φ200/220	50/60	4	1250/1600	30 /minutes	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN)-CEFMT 5IK60GX-CEFMT	60	1φ220/240	50	4	1300/1350	30 /minutes	4.14/5.22	4.56/4.40	0.56/0.55	4/450V
5IK60A(GN)-SFMT 5IK60GX-SFMT	60	3φ220	50/60	4	1300/1550	30 /minutes	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN)-UFMT 5IK60GX-UFMT	60	3φ380	50/60	4	1400/1550	30 /minutes	14.33/10.15	4.2/3.79	0.21/0.22	-



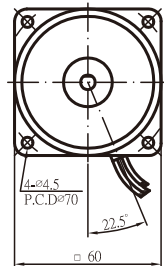
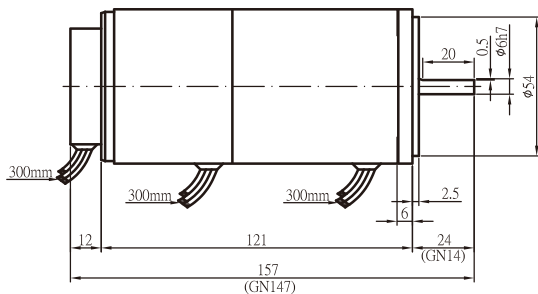
90W

90W MODEL	OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
5IK90A(GX)-AFMT	90	1φ100/110	50/60	4	1300/1650	30 /minutes	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CFMT	90	1φ200/220	50/60	4	1300/1650	30 /minutes	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90A(GX)-CEFMT	90	1φ220/240	50	4	1350/1350	30 /minutes	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SFMT	90	3φ220	50/60	4	1400/1650	30 /minutes	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UFMT	90	3φ380	50/60	4	1400/1650	30 /minutes	23.3/18.14	6.3/5.3	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

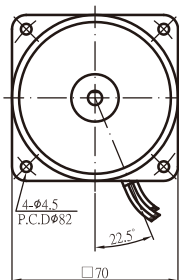
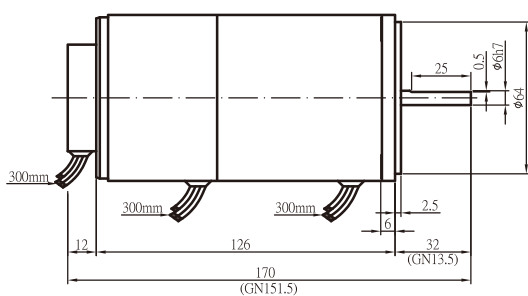
ELECTRO-MAGNETIC VARIABLE SPEED BRAKE MOTOR

■ OUTLINE & SPECIFICATION
■ UNIT : mm



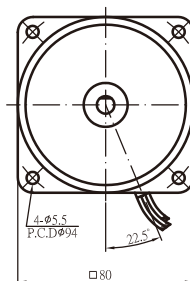
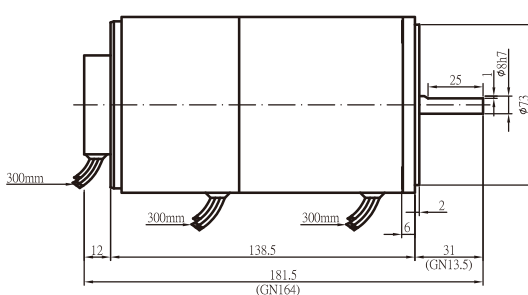
6W

6W TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
2IK6RA(GN)-AM	6	100/110	50/60	4	0.22/0.21	90~1400/90~1700	0.7/0.63	0.4/0.55	0.72/0.5	2.5	300
2IK6RA(GN)-CM	6	200/220	50/60	4	0.1/0.11	90~1400/90~1700	0.65/0.7	0.44/0.66	0.6/0.7	0.7	450
2IK6RA(GN)-CEM	6	230/240	50	4	0.11/0.1	90~1400	0.74/0.77	0.39/0.52	0.72/0.8	0.7	450



15W

15W TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
3IK15RA(GN)-AM	15	100/110	50/60	4	0.36/0.35	90~1400/90~1700	0.88/1.04	0.9/1.5	1.0/1.1	5	300
3IK15RA(GN)-CM	15	200/220	50/60	4	0.18/0.18	90~1400/90~1700	0.75/1.1	1.1/1.5	1.0/1.1	1.2	450
3IK15RA(GN)-CEM	15	230/240	50	4	0.17/0.17	90~1400	1.06/1.06	1.40/1.32	1.02/1.25	1.2	450



25W

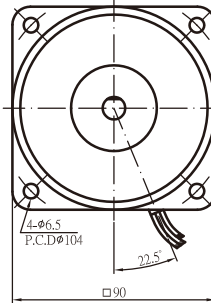
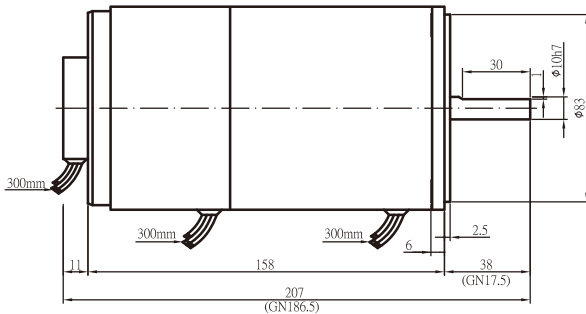
25W TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
4IK25RA(GN)-AM	25	100/110	50/60	4	0.57/0.45	90~1400/90~1700	1.4/1.4	2.17/2.5	1.4/1.4	6	300
4IK25RA(GN)-CM	25	200/220	50/60	4	0.28/0.25	90~1400/90~1700	1.57/1.38	2.1/2.4	1.6/1.3	1.5	450
4IK25RA(GN)-CEM	25	230/240	50	4	0.25/0.24	90~1400	1.38/1.55	2.2/2.4	1.5/1.7	1.5	450

NOTES :

1. The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
2. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

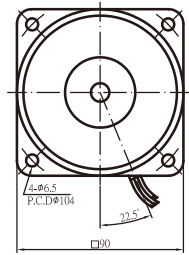
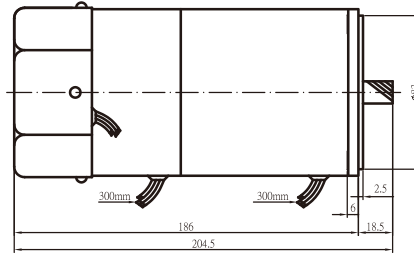
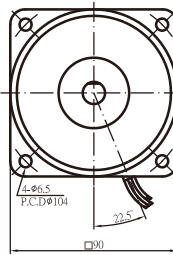
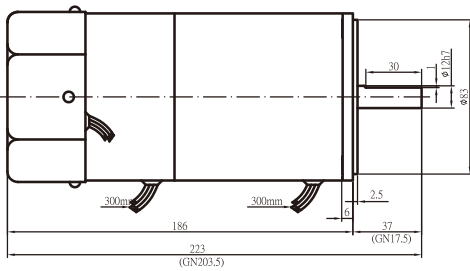
ELECTRO-MAGNETIC VARIABLE SPEED BRAKE MOTOR

■ OUTLINE & SPECIFICATION
 ■ UNIT : mm



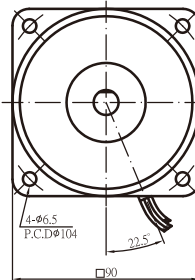
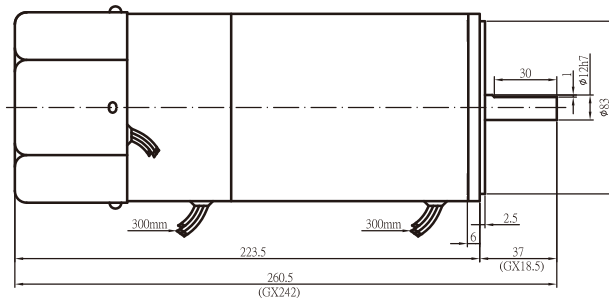
40W

40W TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK40RA(GN)-AM	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8	10	300
5IK40RA(GN)-CM	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1	2.5	450
5IK40RA(GN)-CEM	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6	2.5	450



60W/60W-GX

60W/60W-GX TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK60RA(GN)-AFM 5IK60RGX-AFM	60	100/110	50/60	4	1.8/1.12	90~1400/90~1700	2.6/2.94	5.6/6.9	3.5/4.0	16	300
5IK60RA(GN)-CFM 5IK60RGX-CFM	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	4.6/4.4	4	450
5IK60RA(GN)-CEFM 5IK60RGX-CEFM	60	230/240	50	4	0.56/0.55	90~1400	4.1/5.22	6.17/7.2	4.37/5.2	4	450



90W

90W TYPE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
								1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK90RA(GX)-AFM	90	100/110	50/60	4	1.5/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1	22	250
5IK90RA(GX)-CFM	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	4.4/4.4	5	450
5IK90RA(GX)-CEFM	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6	5	450

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

ELECTRONIC INSTANT BRAKE (SB Series)

OPERATING FREQUENCY AND LIMITATION

Although the "IN" model could be used for inch movement, a rise in temperature would result from frequent start-stop action of the motor. Please suspend operation temporarily if the surface temperature of the motor exceeds 90°C.

BRAKING PRINCIPLES

Electronic brake circuit is design to introduce pulsated direct current rectified by the half wave into motor, to produce directional magnetic field and stop the motor instantly. Brake current is produced by the controller and introduced into motor in a very short time only. The time frame for brake current enter into the motor (approx 0.5 seconds) is controlled by timing circuit inside the controller. No friction created between parts, therefore lifespan is extended.

INSTALLATION CAUTIONS.

- Apply only one electronic brake onto one motor.
- Motor wiring depends on motor output, please follow the wire diagram to make the wire connection.
- When SW1 is switched from "run" to "brake", the electronic brake is applied to stop the motor instantly.
- Be cautious about the 200 and above voltage among terminals when wiring.
- Apply industrial standard relay switch and gate switch. SB32-IN and SB32S-IN contact capacity is above AC200V, 5A.
- Wire-diagram, it is based on motor shaft point of view, as for clockwise rotate connectivity.
 - For conduct counter-clock rotation: 1. induction motor: yellow line and white wire on the exchange. 2. reversible motor: switch SW2 switches.
 - CW: clockwise CCW: counter-clockwise rotation
- For operated a reversible motor, it is require more than 0.5 second to switch its reversible mode.
- In the case of frequent braking, its external resistance will be very hot. For the installation, should pay particular attention.
- Within 0.5 seconds after motor start and operation, please do not perform reversible operation.
- To protect power connect spot from spark light when power on or off, it is required to enforce the connectivity via wire diagram such as surge absorber with CR circuit. $R_o=5\sim 200\Omega$ (1/2W above) $C_o=0.1\sim 0.2\ \mu F$ (400VAC above)



SPECIFICATIONS

MODEL	VOLTAGE (V)	PHASE	BRAKE HOLDING FORCE	BRAKE PRECISION	MOTOR OUTPUT (W)	TEMPERATURE
SB31-IN	100 ~ 125	1 ϕ Single Phase	0.5 / Second	200°	6 ~ 90	-10°C ~ +40°C
SB32-IN	200 ~ 240	1 ϕ Single Phase	0.5 / Second	200°	6 ~ 90	-10°C ~ +40°C
SB32S-IN	200 ~ 240	3 ϕ Three Phase	0.5 / Second	200°	6 ~ 90	-10°C ~ +40°C

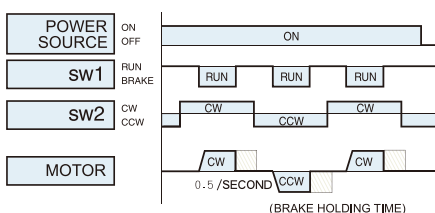
INSULATING RESISTANCE :

Tested value at 10M Ω and above, measured by DC 500V hi-resistance meter between the coil and housing.

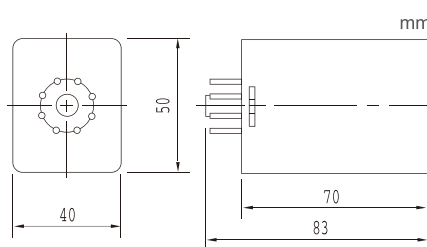
INSULATION ENDURANCE :

No damages caused after 1kV at 60Hz was tested for one minute between the coil and housing.

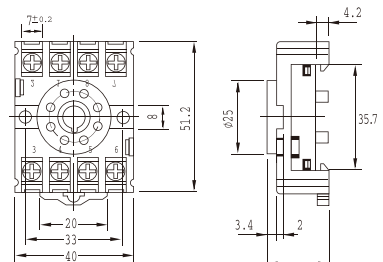
OPERATIONAL STEPS OF AN ELECTRONIC BRAKE



DRAWING DIMENSIONS



8-PIN BASE :

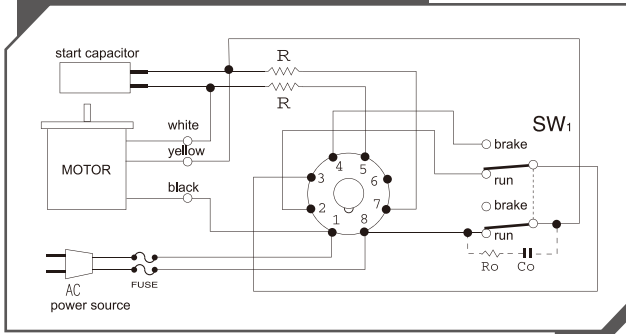


ELECTRONIC INSTANT BRAKE

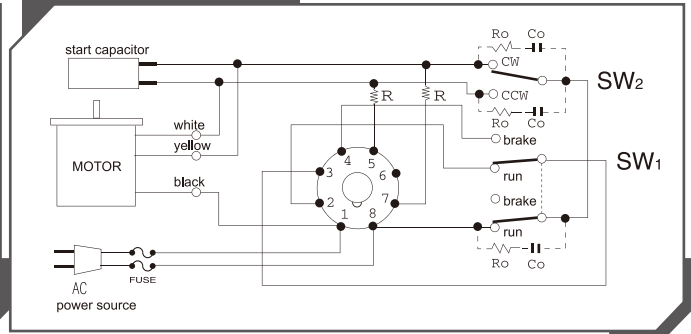
SB31-IN SINGLE PHASE 110~125V

SB32-IN SINGLE PHASE 200~240V

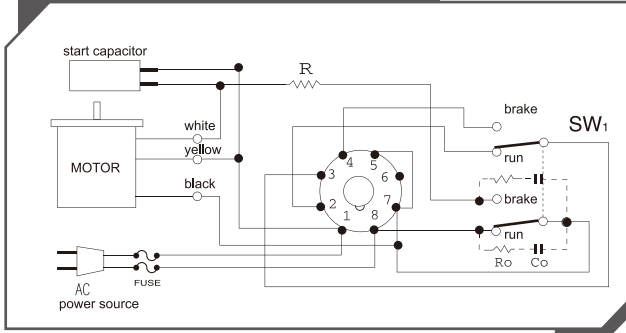
OUTPUT 6W~25W · SINGLE DIRECTION ROTATION



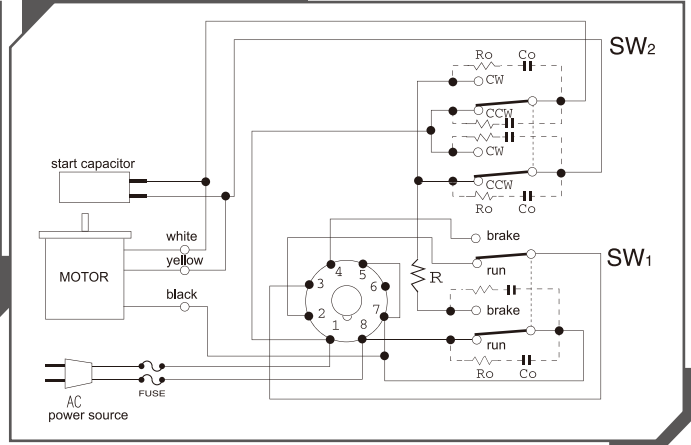
OUTPUT 6W~25W · REVERSIBLE



OUTPUT 40W~90W · SINGLE DIRECTION ROTATION

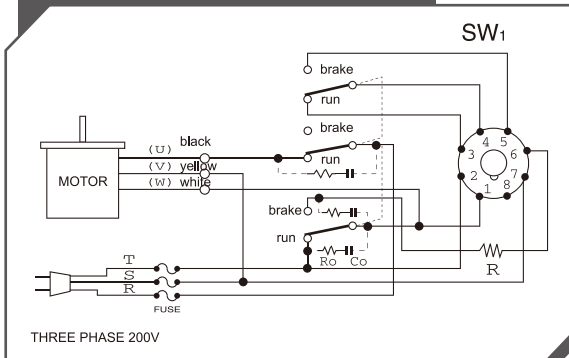


OUTPUT 40W~90W · REVERSIBLE

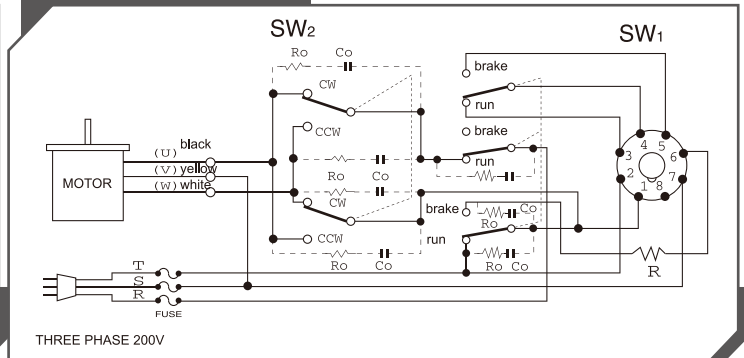


SB32S THREE PHASE 200~240V

OUTPUT 25W~90W · SINGLE DIRECTION ROTATION



OUTPUT 25W~90W · REVERSIBLE



SELECTION OF EXTERNAL RESISTANCE

- Output 6W~25W: external resistance 20W/20Ω. (Model:DDR20W20 Ω)
- In frequent braking situation, temperature of external resistance would be very high. please use external resistance 30W/20Ω. (Model:DDR30W20Ω)
- Output 40W~90W: external resistance 50W/50Ω. (Model:DDR50W50 Ω)
- In frequent braking situation, temperature of external resistance would be very high. please use external resistance 80W/50Ω. (Model:DDR80W50Ω)

CLUTCH BRAKE MOTOR

FEATURES



■ SUITABLE FOR HIGHLY FREQUENT START/STOP OPERATION

High precision and responsive clutch and brake are most suitable for frequent start/stop applications.

■ PRECISE POSITIONING

When the brake is in use, the clutch will separate the link from the brake, so there are no overruns, making positioning precise and accurate.

■ SIMPLE DESIGN

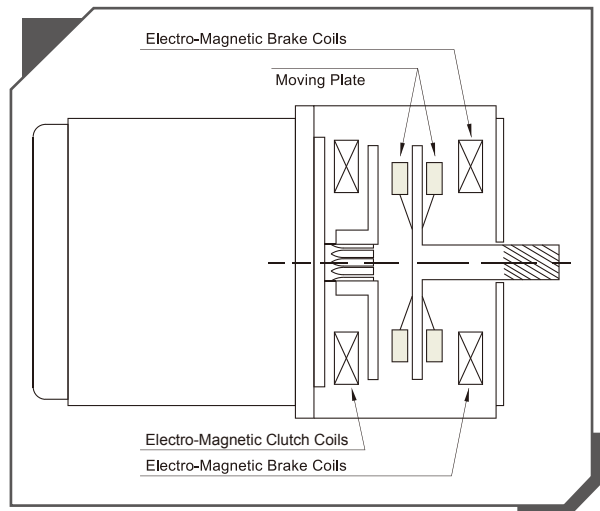
Adapting compact and space-saving design, making it easy to operate and looking elegant.

CONSTRUCTION OF CLUTCH BRAKER

A clutch brake is a precision clutch assembled with a brake, suitable for highly frequent start/stop operation. After adjoining with a speed reducer, it can easily accomplish actions such as positioning, inch movement and interval transportation.

■ SPECIFICATION OF THE CLUTCH BRAKER

MODELS	GK TYPE		GS TYPE	
	BRAKER	CLUTCH	BRAKER	CLUTCH
STATIC FRICTION TORQUE (kg.cm)	10	10	15	15
DYNAMIC FRICTION TORQUE (kg.cm)	7	7	10	10
RATED VOLTAGE (DC-V)	24	24	24	24
CAPACITY (AT 20°C) (W)	8	6	8	6
BRAKE FREQUENCY	Max. : 100 rounds /min			



■ INSULATING RESISTANCE :

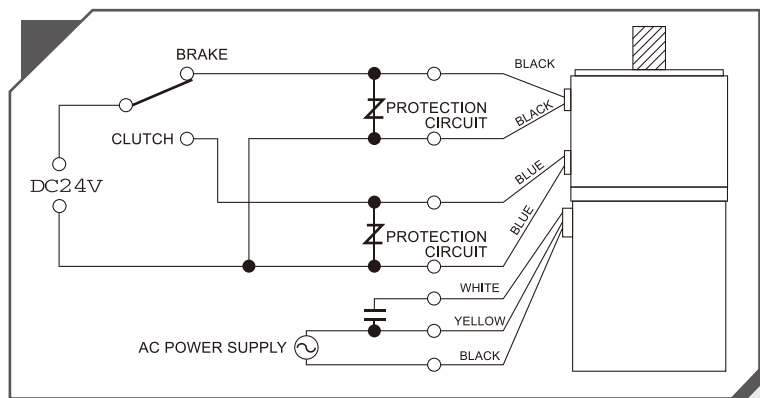
Tested value at 10MΩ and above, measured by DC 500V hi-resistance meter between the coil and housing.

■ INSULATION ENDURANCE :

No damages caused after 1kV at 60Hz was tested between the coil and housing.

WIRING OF A CLUTCH BRAKE

The power source for the motor (AC) and the clutch/brake (DC24V) must be separated. As the switch is on the clutch side when the motor is rotating, the output shaft will start rotating and transmits power accordingly. As the switch is on the brake side, it would stop instantly and hold great retention force. If the DC power is shut off, the output shaft can rotate freely.



GENERAL PURPOSE MOTOR

SPEED CONTROLLED MOTOR

CONTROLLER

BRAKE MOTOR

CLUTCH BRAKE MOTOR

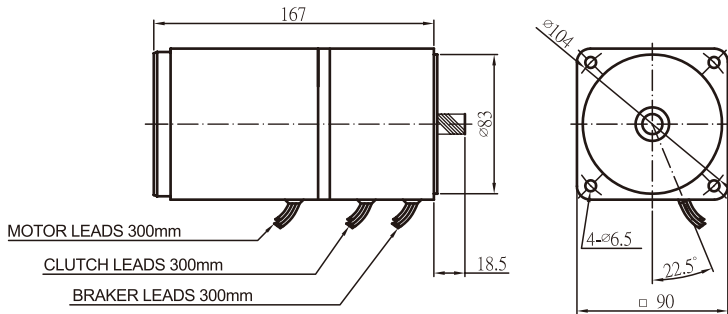
TORQUE MOTOR

SPEED REDUCER

COMPONENTS

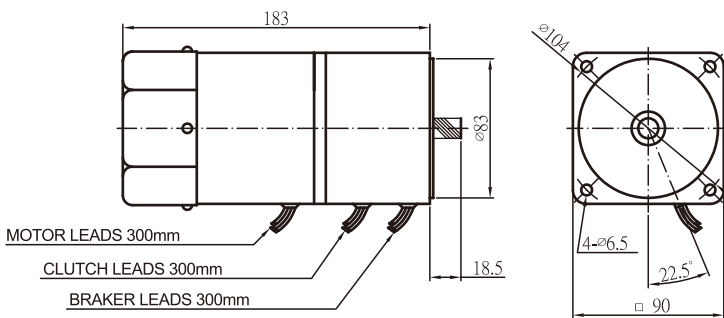
INDUCTION CLUTCH BRAKE MOTOR

■ OUTLINE & SPECIFICATION
 ■ UNIT : mm



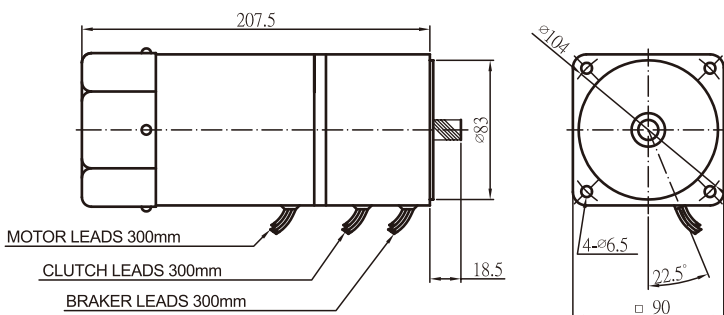
40W

40W MODEL		OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
MOTOR	CLUTCH BRAKE										
5IK40GK-A	MBC90GN-DC24V	40	1ø100/110	50/60	4	1250/1600	Continuous	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40GK-C	MBC90GN-DC24V	40	1ø200/220	50/60	4	1300/1650	Continuous	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40GK-CE	MBC90GN-DC24V	40	1ø230/240	50	4	1350/1350	Continuous	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40GK-S	MBC90GN-DC24V	40	3ø220	60	4	1400/1600	Continuous	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40GK-U	MBC90GN-DC24V	40	3ø380	60	4	1350/1600	Continuous	9.25/6.68	2.85/2.45	0.16/0.15	-



60W

60W MODEL		OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
MOTOR	CLUTCH BRAKE										
5IK60GS-AF	MBC90GX-DC24V	60	1ø100/110	50/60	4	1200/1650	Continuous	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60GS-CF	MBC90GX-DC24V	60	1ø200/220	50/60	4	1250/1600	Continuous	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60GS-CEF	MBC90GX-DC24V	60	1ø230/240	50	4	1300/1350	Continuous	4.14/5.22	4.56/4.40	0.56/0.55	4/450V
5IK60GS-SF	MBC90GX-DC24V	60	3ø220	60	4	1300/1550	Continuous	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60GS-UF	MBC90GX-DC24V	60	3ø380	60	4	1400/1550	Continuous	14.33/10.15	4.2/3.79	0.21/0.22	-



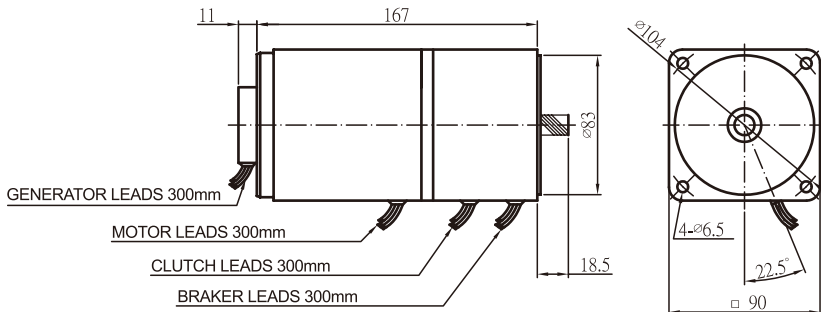
90W

90W MODEL		OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	RATED SPEED (rpm)	RATED TIME	STARTING TORQUE (Kg.cm)	RATED TORQUE (Kg.cm)	RATED CURRENT (A)	CAPACITY (μF)
MOTOR	CLUTCH BRAKE										
5IK90GS-AF	MBC90GX-DC24V	90	1ø100/110	50/60	4	1300/1650	Continuous	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90GS-CF	MBC90GX-DC24V	90	1ø200/220	50/60	4	1300/1650	Continuous	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90GS-CEF	MBC90GX-DC24V	90	1ø230/240	50	4	1350/1350	Continuous	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90GS-SF	MBC90GX-DC24V	90	3ø220	60	4	1400/1650	Continuous	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90GS-UF	MBC90GX-DC24V	90	3ø380	60	4	1400/1650	Continuous	23.3/18.14	6.3/5.3	0.4/0.3	-

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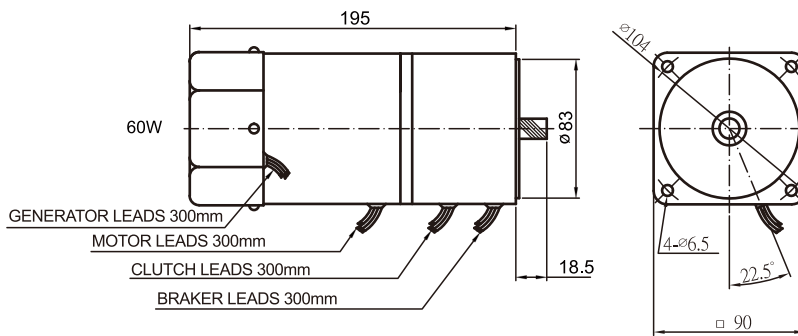
VARIABLE SPEED CLUTCH BRAKE MOTOR

■ OUTLINE & SPECIFICATION
■ UNIT : mm



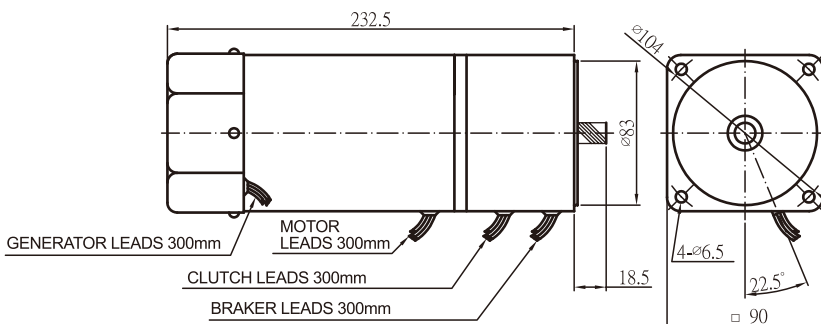
40W

40W MODEL MOTOR	CLUTCH BRAKE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
									1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK40RGK-A	MBC90GN-DC24V	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8	10	300
5JK40RGK-C	MBC90GN-DC24V	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1	2.5	450
5IK40RGK-CE	MBC90GN-DC24V	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6	2.5	450



60W

60W MODEL MOTOR	CLUTCH BRAKE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
									1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK60RGK-AF	MBC90GN-DC24V	60	100/110	50/60	4	1.8/1.12	90~1400/90~1700	2.6/2.94	5.6/6.9	3.5/4.0	16	300
5JK60RGK-CF	MBC90GN-DC24V	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	4.6/4.4	4	450
5IK60RGK-CEF	MBC90GN-DC24V	60	230/240	50	4	0.56/0.55	90~1400	4.14/5.22	7.2	5.2	4	450



90W

90W MODEL MOTOR	CLUTCH BRAKE	RATED OUTPUT (W)	VOLTAGE (V)	FREQ. (HZ)	POLE (P)	CURRENT (A)	ADJUSTABLE RANGE (rpm)	STARTING TORQUE (Kg.cm)	MAXIMUM TORQUE/ PRE-SET TURNINGS (Kg.cm)		CAPACITOR	
									1200rpm	90rpm	CAPACITY (μF)	WITHSTAND VOLTAGE (VAC)
5IK90RGS-AF	MBC90GX-DC24V	90	100/110	50/60	4	1.5/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1	22	250
5IK90RGS-CF	MBC90GX-DC24V	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	4.4/4.4	5	450
5IK90RGS-CEF	MBC90GX-DC24V	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6	5	450

NOTES :

1. A clutch motor has great inertia according to the stop frequency and interval. When selecting a speed reducer, please calculate the feedback inertia accurately on your machine and advise us, so we can provide you the applicable model of speed reducer.
2. Instant start and stop will result in great currents, causing the temperature to rise rapidly, thus the start-stop frequency could not exceed 20 times per minute. GK model clutch brake motors have GN shafts, and GS model clutch brake motors have GX shafts.

GENERAL PURPOSE
MOTOR

SPEED CONTROLLED
MOTOR

CONTROLLER

BRAKE MOTOR

CLUTCH BRAKE
MOTOR

TORQUE MOTOR

SPEED REDUCER

COMPONENTS

SPEED REDUCER

■ OUTLINE & SPECIFICATION
 ■ UNIT : mm

HOW TO SELECT A SPEED REDUCER

■ ROTATION AND TORQUE GIVEN FROM CONJUNCTION WITH SPEED REDUCER

Following is the calculation formula:

$$\text{Rotations : } N_G = \frac{N_M}{i}$$

$$\text{Torque : } T_G = T_M \cdot i \cdot \eta$$

N_G : Rotations after conjunction with speed reducer (rpm)

N_M : Rotations of motor (rpm)

i : Ratio

T_G : Torque after conjunction with speed reducer (kg·cm)

T_M : Torque of motor (kg·cm)

η : The transmission efficiency of speed reducer

■ MAXIMUM TORQUE ALLOWED

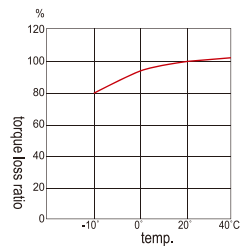
The maximum torque a speed reducer can tolerate is limited due to materials or other specs. Please see the specification of speed reducer for maximum torque allowed at different ratio.

■ ALLOWABLE RADIAL LOAD AND AXIAL LOAD

Radial load refers to the bending load of output shaft at the 1/2 point, commonly used in units linked by chains. Radial load can be disregarded if a coupling is used. Do not over-load since radial load and axial load may affect service life and strength.

■ ADJUSTED THE SPEED REDUCER RATIO VIA ENVIRONMENT TEMPERATURE

Transmission efficiency of a speed reducer apparently does affected by the environment temperature. The graphic display the torque loss percentage at different ambient temperature (for reference only).



■ MOTOR EQUIP WITH ROUND SHAFT AND GEAR SHAFT, ONLY GEAR SHAFT CAN CONJUNCT WITH SPEED REDUCER.



■ LOAD PATTERNS VS. LIFESPAN OF SPEED REDUCER

Speed Reducer lifespan will vary by ways of loading including but not limit to operation time frame, different type of bearing. The following table assumes that the load gear is under the maximum permissible torque. (Reference for engineers)

Unit : hrs

LOAD PATTERN	BEARING			BALL BEARING			Application instructions
	5 hrs/day	8 hrs/day	24 hrs/day	5 hrs/day	8 hrs/day	24 hrs/day	
FIXED LOAD	2000	1500	1000	6250	5000	3400	Operated in one direction, such as conveyors.
SLIGHT IMPACT	1500	1250	800	4200	3400	2500	Frequent start/stop, ex. cam operator.
STRONG IMPACT	800 ~1000	700 ~1000	600 ~700	2000 ~2500	1700 ~2500	1400 ~1700	Reversible motors, instant moment reversed, with brake system in an instant brake.

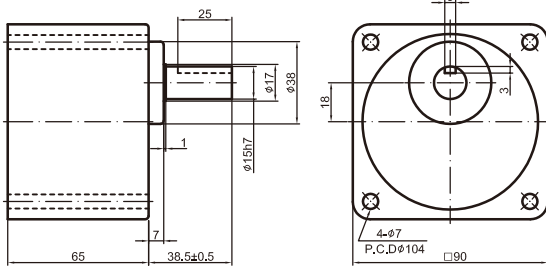
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

SPEED REDUCER

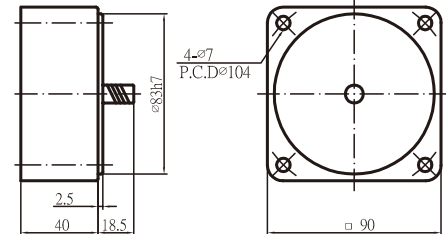
■ OUTLINE & SPECIFICATION
 ■ UNIT : mm



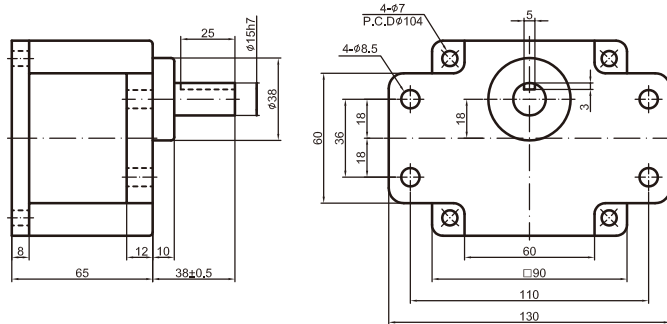
■ 5 GX□KB / SPEED REDUCER



■ 5GX10XK / INTERMEDIATE SPEED REDUCER

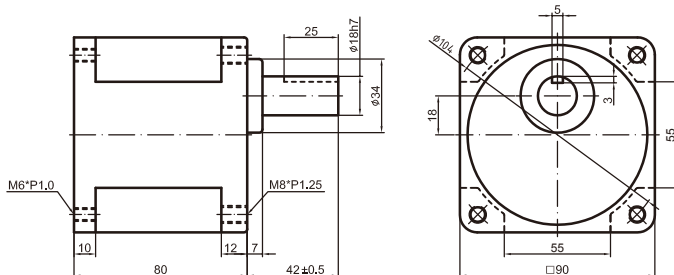


■ 5 GX□K / SPEED REDUCER



SPEED(rpm)	500	300	200	120	100	90	75	60	50	30	20	15	10	9	7.5
SPEED REDUCTION RATIO 50HZ	3	5	7.5	12.5	15	-	20	25	30	50	75	100	150	-	200
SPEED REDUCTION RATIO 60HZ	3.6	6	9	15	18	20	-	30	36	60	90	120	180	200	-
MAX. TORQUE(kgf.cm)	15	26	38	57	69	69	86	103	124	200	200	200	200	200	200

■ 5 GX□KBH / GRAVITY FORCE TYPE REDUCER



SPEED(rpm)	30	20	15	10	9	7.5
SPEED REDUCTION RATIO 50HZ	50	75	150	150	-	200
SPEED REDUCTION RATIO 60HZ	60	90	180	120	200	-
MAX. TORQUE(kgf.cm)	350	350	350	350	350	350

NOTES :

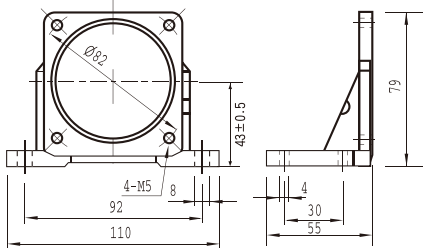
1. Please fill in the required speed reduction ratio in the □ (square) after the speed reducer model no.
2. Rotational speed is calculated by dividing the synchronous speed of the motor (50Hz: 1500rpm; 60Hz: 1800rpm) with the reduction ratio. Depending on total load, actual rotational speed is 2%~20% less.
3. Speed reducers marked in the highlighted areas have opposite rotational direction to the motor. Others unmarked have the same rotational direction as the motor.
4. Attention: metal chips or objects in speed reducer will result in gear damage, noise and shorten service-life when assembling with motor.
5. Please make sure that the shaft size of the motor matches to that of the accompanying reducer model before assembly, otherwise inconformity will occur.

COMPONENTS

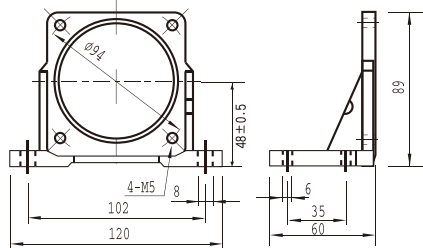
L TYPE BASE BRACKET FOR MOTOR INSTALLATION



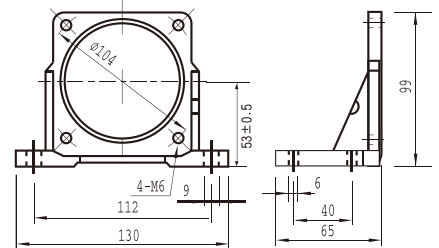
PAL-3N (□70mm)



PAL-4N (□80mm)

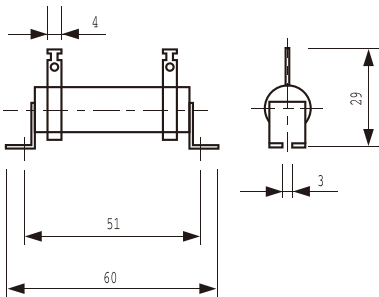


PAL-5N (□90mm)

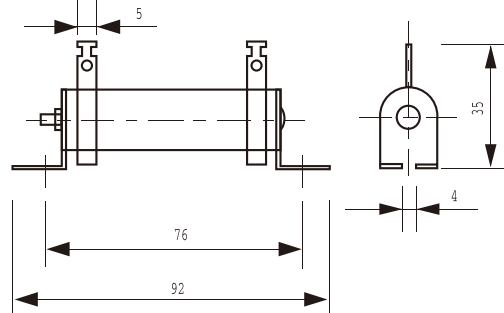


EXTERNAL RESISTOR FOR ELECTRONIC BRAKE CIRCUITS

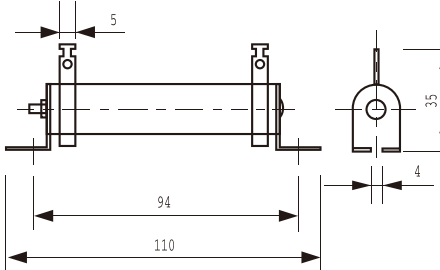
DDR10W10Ω J (10/10)



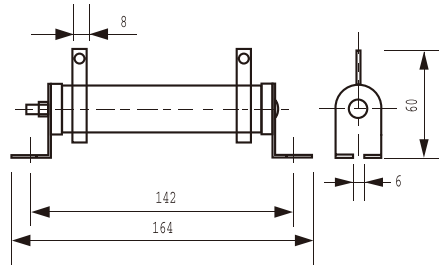
DDR20W20Ω J (20/20)



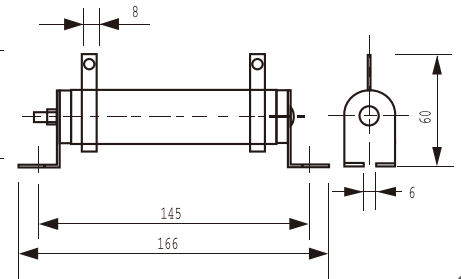
DDR30W20Ω J (30/20)



DDR50W50Ω J (50/50)



DDR80W50Ω J (80/50)

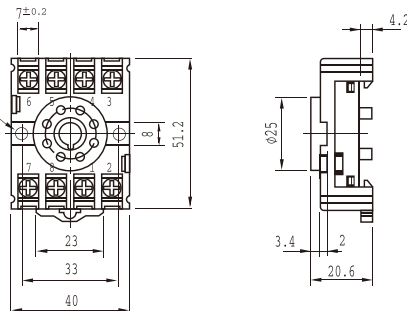


EXTENDED BASE BRACKET

PF-083A PIN Base (8 PIN)

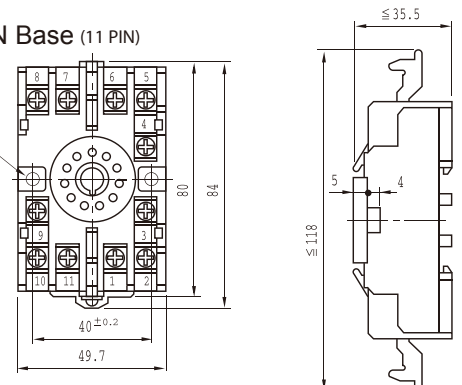


2-∅4.5
Installation Hole



11-PFA PIN Base (11 PIN)

2-∅4.5
Installation Hole



GENERAL PURPOSE
MOTOR

SPEED CONTROLLED
MOTOR

CONTROLLER

BRAKE MOTOR

CLUTCH BRAKE
MOTOR

TORQUE MOTOR

SPEED REDUCER

COMPONENTS



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MOTOR AND SPEED REDUCER

AGENT



V.3.0.02