GGM
GLOBAL GEARED MOTOR

www.ggm.co.kr

OPERATION MANUAL

GUA SERIES
SPEED CONTROL UNIT

- Headquarters / 1st Factory : 22, Gyeongin-ro 3beon-gil, Bucheon-si, Gyeonggi-do, Republic of Korea
  Tel:+82-32-664-7790 Fax:+82-32-611-7791
- Attached research institute / No. 2 factory : 180, Oksan-ro, Bucheon-si, Gyeonggi-do, Republic of Korea
  Tel:+82-32-684-7791 Fax:+82-32-683-5059

GGM Co., Ltd.

Thank you for purchasing the GGM product.
Before use this product, read well manual certainly and understand all about knowledge, safety information and cautions of product, and use right way. After read, please be sure to keep fixed place to refer anytime.

1. Confirmation at product arrival

- Confirm whether product is same with your order.
- If another product is installed, there is danger of injury or fire hazard.
- If, in case is damaged or insufficient, please contact your nearest dealer.

1) CONTROLLER ---------- 1unit
2) Extension line (8PIN) ---------- 1unit
3) Manual (this booklet) ---------- 1copy

2. Specifications

Model / Characteristics	GUA-U	GUA-C
Rated voltage and Power Frequency	Single Phase AC110V 60Hz Single Phase AC115V 60Hz	Single Phase AC220V 50/60Hz Single Phase AC230V 50/60Hz Single Phase AC240V 50Hz
Operating Voltage Range	±10%(Contrast over rated voltage)	
Application Motor output	INDUCTION : 6 ~ 180W REVERSIBLE : 6 ~ 90W	
Speed control Range	60Hz : 90~1700rpm 50Hz : 90~1400rpm	
Speed regulation	5%(Normal value)	
Speed setting	Set by VOLUME	
Ambient temperature Range	-10 ~ 40℃	
Storage temperature Range	-20 ~ 60℃	
Operating humidity Range	Below 85% (where is no condensation)	

Option (Extension Cable)

Name of Product	Length of Extension Line
KE-05	0.5m
KE-10	1m
KE-15	1.5m
KE-20	2m

In case of CONTROLLER and MOTOR are far away, refer to OPTION specification of above table. It can be extended up to 2m by single extension Line, and there is worries of motor characteristics decline when extend more than 2.5m that do not use in this case.

3. CONTROLLER CODING SYSTEM

G	U	A	—	C	—	60

GGM Co.,LTD.

Unit Type

Analogue Type

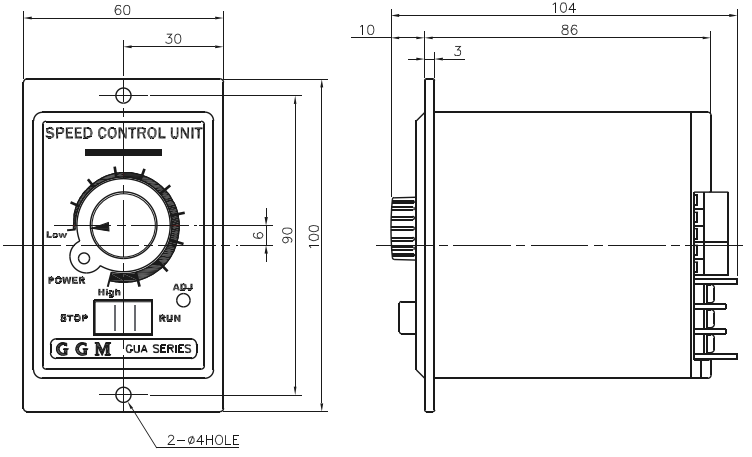
C : Single Phase
AC220V 50/60Hz
AC230V 50/60Hz
AC240V 50Hz

U : Single Phase
AC110V 60Hz
AC115V 60Hz

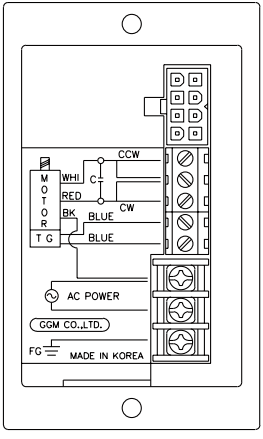
06 : 6W
15 : 15W
25 : 25W
40 : 40W
60 : 60W
90 : 90W
120 : 120W
180 : 180W

4. Outside View of Product

Front and side of main body



Rear side of main body



5. Precaution

Use and operate device according to the following precautions. If do not follow the precautions, there may be electric shock, injury, worries of fire. Please keep certainly because it is important contents.

Installation Precautions

1. Please check whether actual products is same with order sheet.
2. Use at place where ambient temperature range is -10~40 ℃ and humidity is 85% or less. Avoid such places of direct sunlight, moisture and fat and should be installed COVER when use in such places.
3. Should be avoided such places where is shock, serious impact, a lot of dusts, flammability GAS, generating corrosive GAS.
4. Body COVER, KNOB etc. are resin products so that do not in the environments where is methanol, benzene, organic solvents such as thinner, ammonia, caustic soda, strong alkali.
5. There is ventil part on back side of CONTROLLER. It should be installed in a box not to be contacted easily by outsiders.
6. Do not put combustibles absolutely on surroundings of MOTOR and CONTROLLER.
7. Do not use in place generated much static electricity.
8. There is no protective device in CONTROLLER. Should be installed overcurrent protective device, earth leakage breaker, temperature thermal protector for safety.

Wiring Precautions

1. If do parallel operation with controlled devices in electric furnace of high capacity, THYRISTOR for welding machine, there may be occasion of malfunction. Separate and wire by separate power circuit.
2. When do wiring CW-COM, CCW-COM for switching the direction at wiring for external remote control, please be careful not to be connected CW-COM, CCW-COM terminals at the same time. (when operate in state of connected CW-COM, CCW-COM both terminals, there may be malfunction and can go hard on the motor.)

Handling Precautions

1. Do not carry catching LEAD WIRE part of MOTOR. There is risk of disconnection.
2. Protect MOTOR SHAFT to protect against damage.
3. Do not hang down or get on MOTOR absolutely.
4. Take care water not to be bound in place with danger of water contact.
5. Do not operate with wet hands.
6. Turn off power certainly when do installing, moving, wiring and checking.
7. Do not touch absolutely on rotating part of MOTOR.
8. Do not use damaged MOTOR..
9. In case of discard this product, process as industrial waste.
10. If you need repairs, please contact us or purchased shop.
11. Do not remodel by the customer, because it is beyond the scope of the warranty of our company.

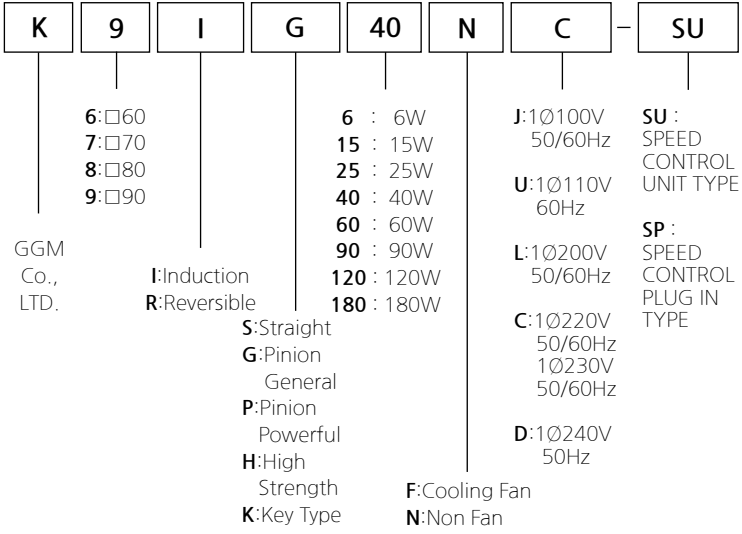
Operating Precautions

1. Use surface temperature of MOTOR at below 90℃.
2. If do not use long period, please turn OFF power.
3. Set switch to 'STOP' position certainly before connect power.
4. Do not touch the hands or body while operating or just after stop. There are worries of burn ecause MOTOR surface is high temperature.
5. If malfunction occurs, turn off the power immediately and stop.
6. When was power failure or THERMAL PROTECTOR was working, turn off power. Due to an unexpected restart may cause injury.

6. Product Features

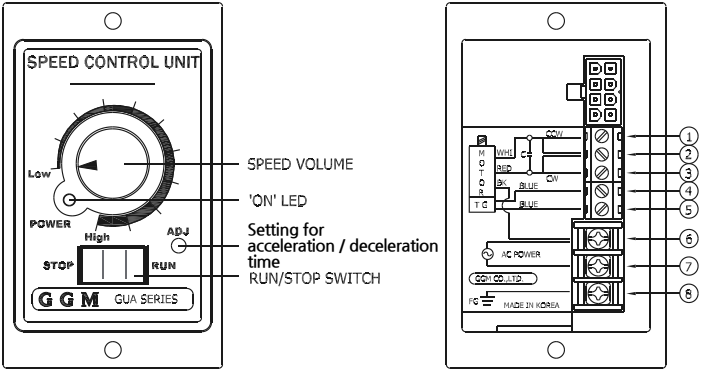
1. It is an UNIT product of detachable CONTROL MOTOR and CONTROL MOTOR. CONNECTOR is connected with the ONE TOUCH. It is most suitable in usage that remote control need.(There is not Moment stop function.)
2. There are assembled all needed devices of Speed control circuit, MOTOR CONDENSER, speed setter etc.
   in CONTROL UNIT. (There is also an external mounting type CONDENSER.)
   Connect together MOTOR and CONTROL UNIT by exclusive use CONNECTOR and can control the speed of MOTOR simply by connection AC terminals to POWER SOURCE.
3. If use an extension cord for the CONNECTOR OPTION, can be controlled speed by apart MOTOR and MOTOR CONTROL UNIT part maximum up to 2.0m.
4. Variable speed range is widely available by 50Hz: 90~1400rpm, 60Hz: 90~1700rpm speed widely available.

7. Application motor

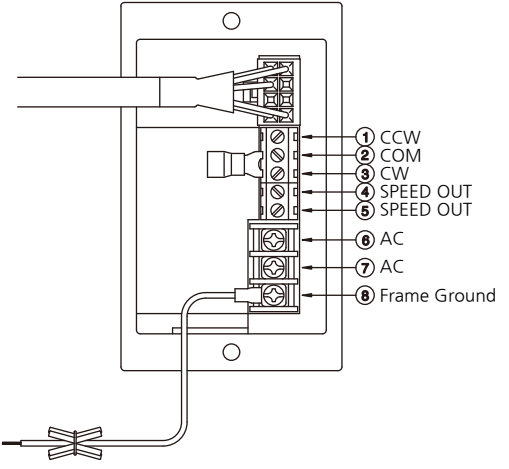


- MOTOR and SPEED CONTROLLER are packaged in a separate that please check whether is available to use on the application MOTOR.

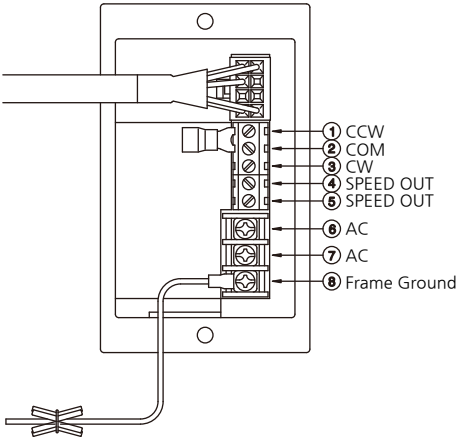
8. How to use



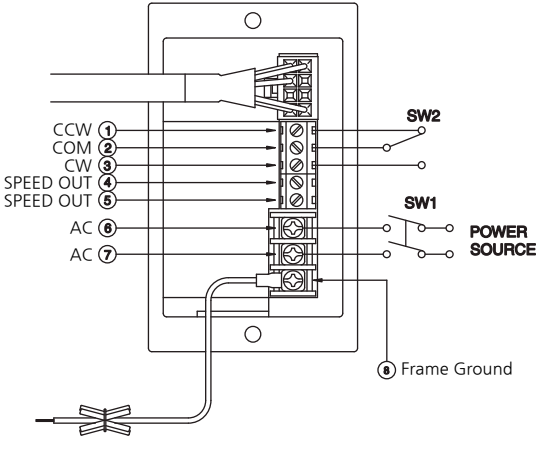
When operating CW Direction



When operating CCW Direction



When operating both CW and CCW Direction



SWITCH Specification

SWITCH Number	SWITCH Contact Capacity
SW1	AC125V or AC250V over 5A
SW2	AC125V or AC250V over 5A

8-1 Operation

Connects LEAD line CONNECTOR of CONTROLLER UNIT and MOTOR, and connect AC terminal to AC power.
If set RUN/STOP SWITCH of CONTROL UNIT by RUN side, MOTOR rotates clockwise direction when view at output side. (It is SET to rotate clockwise when shipping.)

8-2 Change of speed

If turn knob of SPEED VOLUME of CONTROLLER UNIT to clockwise, MOTOR's rotation is faster, if turn in contrary, the speed is delayed. MOTOR's SPEED is possible to control and set in the range of 50Hz : 90~1400rpm, 60Hz : 90~1700rpm.

8-3 Stop

If set RUN/STOP SWITCH of CONTROL UNIT, MOTOR will stop.
This SWITCH is not ON/OFFof power that equip separate power switch in case of stop MOTOR long hours.

8-4 Switching the direction of rotation

1. Case of continuous operation

When inverse MOTOR's direction of rotation in transfer mechanism such as GEAR HEAD, please replace the terminal location to be positioned the position of terminals of ② COM and ③ CW that are attached to CONTROL UNIT backside connected to ② COM and ① CCW position.
Connect Power CORD terminal always to ⑥ AC, ⑦ AC.
This time, please exchange power by OFF certainly and then connect.

2. When control CW/CCW rotation

As like the left [Figure 3], please replace the direction of rotation by installing Power SWITCH (SW1) for power and exchange SWITCH (SW 2) for CW/CCW rotation. Instantaneous CW/CCW rotation is impossible. For the moment, and replace SWITCH(SW2) after turn off power SWITCH(SW1) and MOTOR stops perfectly.

8-5 SPEED OUT

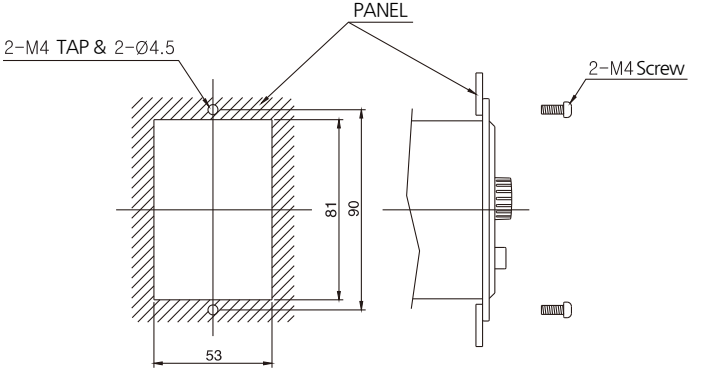
④, ⑤ are terminals which use connecting revolution-indicator by SPEED OUT.
* Can see number of rotation connecting DIGITAL indication type revolution-indicator.

9. Mounting method

Processing of panels

1. Drill holes on mounting PANEL as shown figure below. Assemble CONTROLLER main body and front COVER and fix using M4 screws and nuts.

2. Use mounting PANEL with thickness of less than 2mm.



10. Failure Causes and Countermeasures

Anomalies	Check parts	Checklist	Determination of Breakdown Part	Measures for
Occasion of MOTOR does not rotate	Wiring	whether the wrong wiring	Check wiring	Wiring correction
	Terminal No. ①, ⑦	Check change of speed setting voltage	If the voltage does not change, SPEED CONTROLLER is bad.	
			If Power supply voltage is changing 0V ~ up to supply voltage	
			1) MOTOR is bad	
			2) Overload	Lighten the load.
			3) CONDENSER is bad	
MOTOR rotates but speed is not changed	Wiring	Is it wrong wiring?	Check wiring	Wiring correction
	Speed generator terminal ④, ⑤	Is raised voltage about AC20V at approximately 1700rpm, about AC18V at about 1400rpm ?	In case does not happen, speed generator is bad. In case happen, SPEED CONTROLLER is bad.	
MOTOR is rotating but heating state is not normal.		Is the power voltage is correct?		Supply power voltage correctly or set unit model properly.

※ Contact your vendor or our second factory if you haveany questions about product or requirepost-sales service.

Leader of geared motor GGM CO.,LTD. http://www.ggm.co.kr

Headquarters / 1st Factory
22, Gyeongin-ro 3beon-gil, Bucheon-si,
Gyeonggi-do, Republic of Korea
TEL : 032-664-7790 FAX : 032-611-7791

Attached research institute / No. 2 factory
180, Oksan-ro, Bucheon-si, Gyeonggi-do,
Republic of Korea
TEL : 032-684-7791 FAX : 032-683-5059