GGM GGM GEARED MOTOR
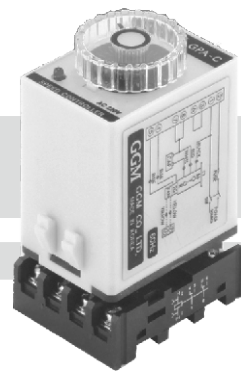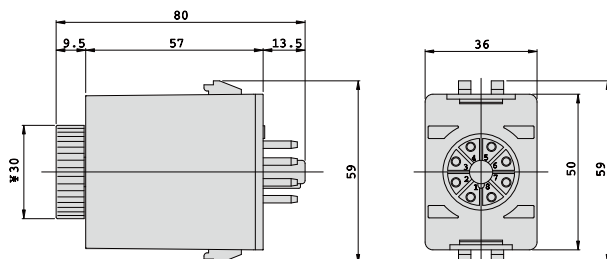
SPEED CONTROL UNIT – GPA

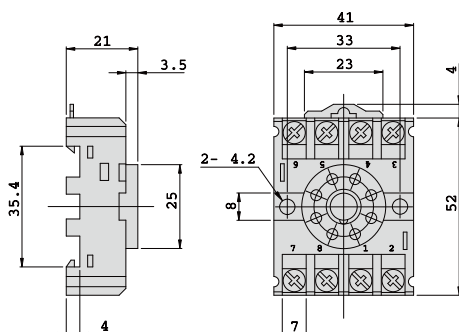## Diagram and general contents
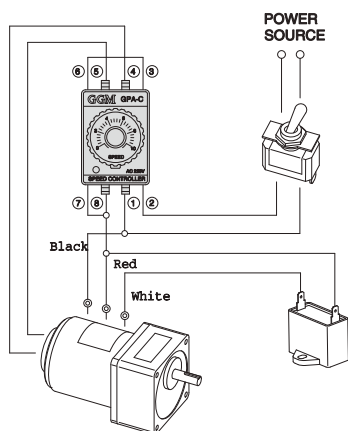
Appearance of Products

■ Main Body

■ SOCKET

Main Body Wiring Diagram

POWER SOURCE

Black
Red
White

1. Motor rotation speed of motor is available to change by speed setter on top of main body.
2. In case of wire of Speed Signal Generator (TG) is long (More than 1m), connect to ④,⑤ terminals using TWIST SHIELD WIRE with 2-cored. (Do not ground SHIELD part.)
3. The thick solid line shows the power circuit. please use about 0.75 ㎟ wires.

Specification

* 1. Application MOTOR is SPEED CONTROL MOTOR (SP TYPE) and SPEED CONTROL & BRAKE MOTOR (D TYPE).
* 2. There is no preservation power in electricity BRAKE.
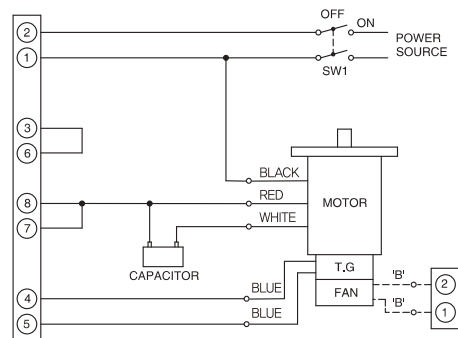* 3. Buy our company products 'GSA' SERIES CONTROLLER in case of need SLOW RUN, SLOW STOP function.

Model / Characteristics	GPA-U	GPA-J	GPA-C	GPA-L
Rated voltage and power Frequency	AC 110V AC 115V	AC 100V	AC 220V AC 230V AC 240V	AC 200V
	Single Phase, 50/60Hz			
Operating Voltage Range	±10%(Compared with Rated voltage)			
Applied MOTOR output *1	INDUCTION : 6～180W REVERSIBLE : 6～90W SPEED & BRAKE : 6～180W			
Speed control range	60Hz : 90～1700 rpm 50Hz : 90～1400 rpm			
Speed regulation	5%(Standard value)			
Speed setter	Built-in (can be installed outside setter : special order)			
Braking *2	Electric motor brake for a period of time Braking through Current			
ELECTRICAL BRAKE hours	0.5 seconds Standard values			
SLOW RUN*3 SLOW STOP	No function			
Ambient temperature	−10℃ ～ 40℃			
Storage temperature	−20℃ ～ 60℃			

Application Motor

REVERSIBLE, SPEED CONTROL & BRAKE MOTOR	AC 110V 50Hz / 60Hz	AC 220V 50Hz / 60Hz	AC 230V 50Hz / 60Hz	AC 240V 50Hz / 60Hz
K6R□6N□-SP, D				
K7R□15N□-SP, D				
K8R□25N□-SP, D				
K9R□40N□-SP, D	GPA-U	GPA-C	GPA-C	GPA-C
K9R□60F□-SP, D				
K9R□90F□-SP, D				
K9R□120F□-D				
K9R□180F□-D				

INDUCTION	AC 110V 50Hz / 60Hz	AC 220V 50Hz / 60Hz	AC 230V 50Hz / 60Hz	AC 240V 50Hz / 60Hz
K6I□6N□-SP				
K7I□15N□-SP				
K8I□25N□-SP				
K9I□40N□-SP	GPA-U	GPA-C	GPA-C	GPA-C
K9I□60F□-SP				
K9I□90F□-SP				
K9I□120F□-SP				
K9I□180F□-SP				

1. □ marks SHAFT TYPE and voltage specification.
2. -SP which is SPEED CONTROL MOTOR PLUG-IN TYPE, and -D is a SPEED CONTROL & BRAKE MOTOR.

SPEED CONTROL UNIT

Main Body Electrical Wiring

1. One-way operation + change of speed

SW1	AC125V or more than AC250V 5A

	RUN	STOP
SW1	ON	OFF

Labels in diagram: OFF, ON, POWER SOURCE, SW1, BLACK, RED, WHITE, MOTOR, CAPACITOR, T.G, FAN, 'B', BLUE, BLUE

■ Cautions
1. MOTOR direction of rotation is clockwise (CW) seeing from axis side. When set Counter-clockwise (CCW), connect exchanging red line and white lines in the MOTOR.
2. When wiring more than 60W, connect and use FAN MOTOR MOTOR leader (yellow line) to ②, ① ('B' part)
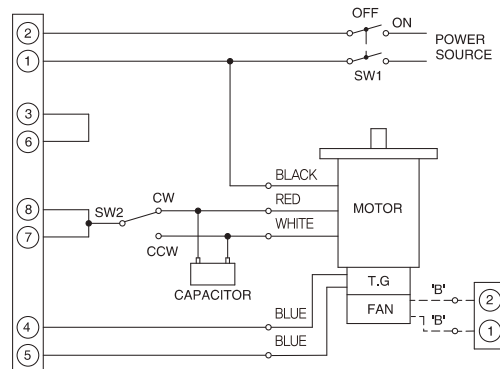
2. One-way operation + change of speed + Braking
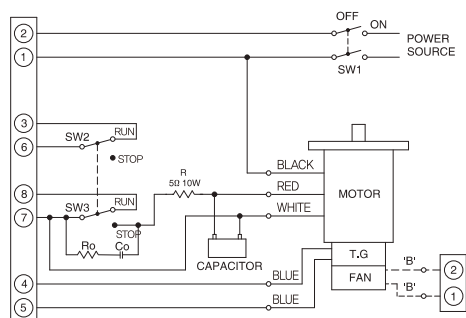
SW1, SW3	AC125V or more than AC250V 5A
SW2	DC20V 10mA
R0, C0	R0=10~200Ω (more than 1/4W) C0=0.1~0.33μF (200 or 400WVAC)
R	More than 4.7Ω ~6.8Ω 10W

	BRAKE		BRAKE	
	RUN	STOP	RUN	STOP
SW1	ON			
SW2 SW3	RUN	STOP	RUN	STOP

Labels: OFF, ON, POWER SOURCE, SW1, SW2, RUN, STOP, SW3, Ro, Co, R 5Ω 10W, BLACK, RED, WHITE, MOTOR, CAPACITOR, T.G, FAN, 'B', BLUE, BLUE
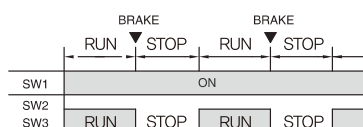
■ Caution
1. MOTOR direction of rotation is clockwise(CW) viewed from output shaft. In case of set Counter-clockwise (CCW), connect the red wire and white wire changing each other.
2. When set SW3 from operation to stop, braking(electric brake) operates about 0.5 seconds and stop momently. (There is no retention.)
3. When connect wiring motor more than 60W, use FAN MOTOR MOTOR leader wire(yellow line) connecting to ②, ①.('B' part)
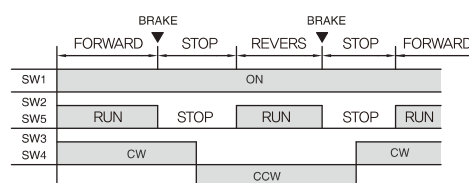
3. Normal/Reverse Operation + change of speed

SW1, SW2	AC125V or more than AC250V 5A

	FORWARD	STOP	REVERSE
SW1	ON		ON
SW2	CW		CCW

Labels: OFF, ON, POWER SOURCE, SW1, SW2, CW, CCW, BLACK, RED, WHITE, MOTOR, CAPACITOR, T.G, FAN, 'B', BLUE, BLUE

■ Cautions
1. For INDUCTION MOTOR, changeover SW2 after stop rotation by setting stop period. (set counterclockwise rotation after stop the run certainly)
2. REVERSIBLE MOTOR does not require the rest period. It is safe to handle SW2 even in state ON of SW1.
3. When wiring more than 60W FAN MOTOR, connect FAN MOTOR leader (Yellow line) to ②, ① and use. ('B' part) Ω

4. Normal/Reverse operation + change of speed + braking
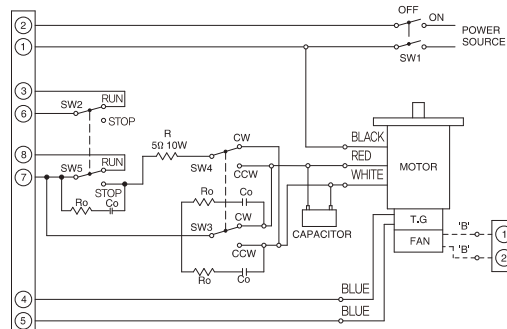
SW1, SW3, SW4, SW5	AC125V or more than AC250V 5A
SW2	DC20V 10mA
R0, C0	R0=10~200Ω (more than 1/4W) C0=0.1~0.33μF (200 or 400WVAC)
R	more than 4.7Ω ~6.8Ω 10W

	FORWARD	BRAKE STOP	REVERS	STOP	FORWARD
SW1		ON			
SW2 SW5	RUN	STOP	RUN	STOP	RUN
SW3 SW4	CW		CCW		CW

Labels: OFF, ON, POWER SOURCE, SW1, SW2, RUN, STOP, SW5, R 5Ω 10W, SW4, CW, CCW, Ro, Co, SW3, CW, CCW, Ro, Co, BLACK, RED, WHITE, MOTOR, CAPACITOR, T.G, FAN, 'B', BLUE, BLUE
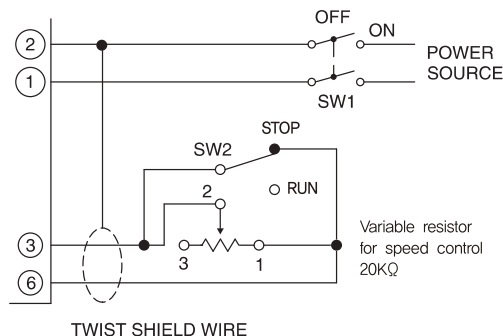
■ Cautions
1. If set SW5 from operation to stop, braking (electric brake) acts about 0.5 seconds and stops in moment.
2. This time, do not operate SW3, SW4 for about 0.5 seconds.
3. Set switching of SW3, SW4 quickly more than switching from stop to operation of SW2, SW5.

Application Electrical Wiring

1. External speed setter usage
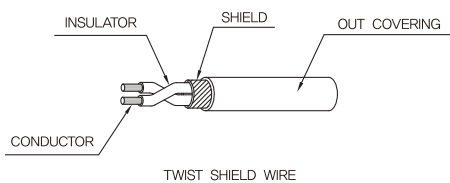

TWIST SHIELD WIRE

* Do not use #3 terminal of VR.
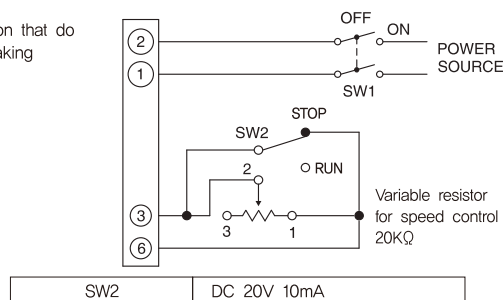VR : External speed setter (20KΩ 1/4W B (20KΩ 1/4W B attribute value)

■ Caution
1. Set scale of the speed setter of main body by lowest (0).
2. Do wiring as short as possible. There is occasion of malfunction.
Use TWIST SHIELD wire in case of malfunction.

TWIST SHIELD WIRE

2. How to make starting faster

When apploved the starting signal in power SWITCH SW1 in case of MOTOR starting was late, operate Run/Stop in SW2 using external speed setter VR.

EX1) Occasion that do not braking

SW2	DC 20V 10mA

* Do not use #3 terminal of VR.
VR : External speed setter (20KΩ 1/4W B (20KΩ 1/4W B attribute value)
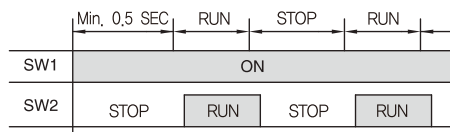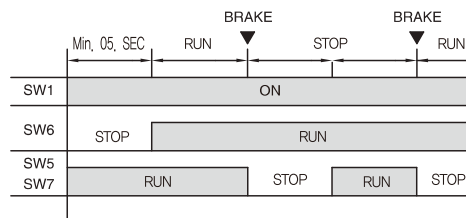

■ Caution
1. Make approve time of SWITCH SW1 faster 0.5 seconds than operation starting signal of SW2.
2. Set speed setter scale of main body by lowest (0), and control speed in external speed setter VR.
3. In case of do operation/stop, operate SW1 in ON state SW2. MOTOR can be controlled even a small signal.
4. Turn SW1 OFF in case of stop long hours.

3. How to make faster starting time

EX2) Occasion that do braking
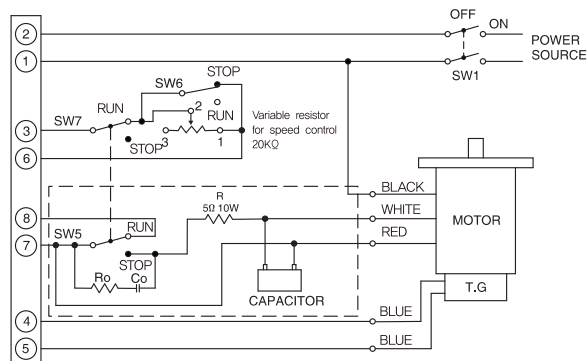
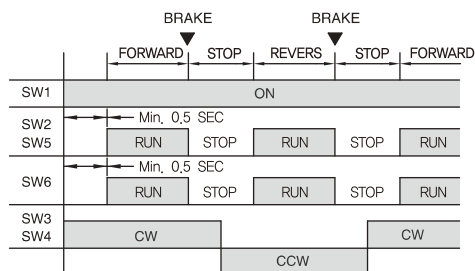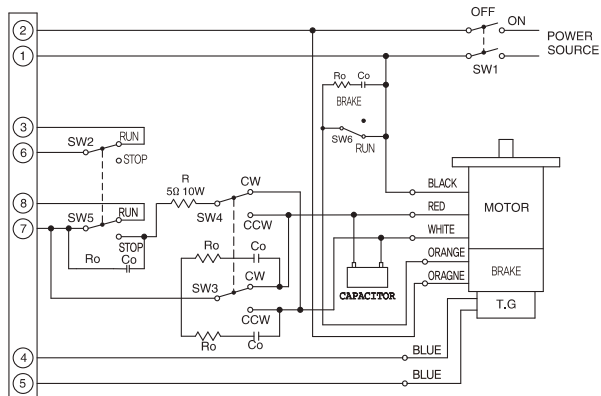| SW1, SW5	AC125V or more than AC250V 5A
SW6, SW7	DC20V 10mA
R0, C0	R0=10~200Ω (more than 1/4W) C0=0.1~0.33μF (200 or 400WVAC)
R	more than 4.7Ω ~6.8Ω 10W

■ Caution
1. Electrical wiring above is "one-way operation + change of speed + braking.
2. Operate power SWITCH SW1 faster more 0.5 seconds than SW6.
3. Set speed setter scale of main body by lowest (0), and control speed in external speed setter VR.
4. Turn SW1 OFF in case of stop long hours.

GGM GGM GEARED MOTOR

Electron BRAKE Attachment MOTOR Wiring

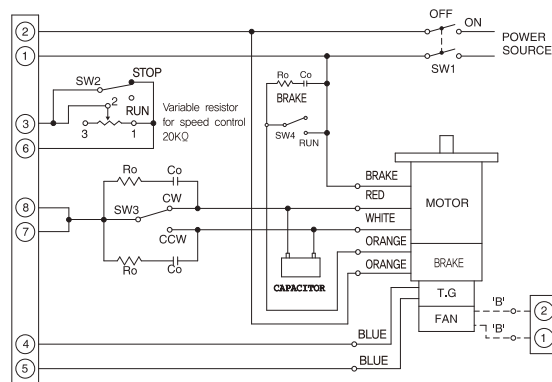### 1. Occasion use jointly electricity BRAKE of CONTROLLER.

| SW1, SW3, SW4, Sw5, SW6	AC125V or more than AC250V 5A
SW2	DC20V 10mA
R0, C0	R0=10~200Ω (more than 1/4W) C0=0.1~0.33μF (200 or 400WVAC)
R	more than 4.7Ω ~6.8Ω 10W

■ Caution
1. If brake while operation, Motor stops in moment by action of Electronic Brake.
2. Operate SW3, SW4 after motor stops.
3. Do switching of SW3, SW4 faster than switching from stop to operation of SW2, SW5, SW6.
4. Do power approve time of SWITCH SW1 faster more 0.5 seconds than operation starting sign by SW2, SW5, SW6.
5. In case of operation/braking, operate in SW2, SW5, SW6 by ON state of SW1.

2. Occasion do not use jointly electricity BRAKE of CONTROLLER.

SW1, SW3, SW4	AC125V or more than AC250V 5A
SW2	DC20V 10mA
R0, C0	R0=10~200Ω (more than 1/4W) C0=0.1~0.33μF (200 or 400WVAC)
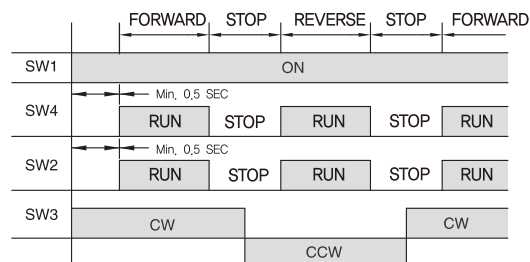
■ Caution
1. Make SW3 switching after rotation has stopped.
2. Set approval time of power switch SW1 faster more 0.5 seconds than signal of operation starting by SW2, SW4.
3. In case of set operation/stop, operate in SW2, SW4 in state of SW1 by ON. MOTOR can be controlled even a small signal.
4. Set speed setter scale of main body by lowest (0), and control speed in external speed setter VR.
5. Turn SW1 OFF in case of stop long hours.

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